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ABSTRACT

Presented is the 1971-72 annual report on the current supply of and demand for special education (SE) personnel, which is published by the U. S. Commissioner of Education. The introduction gives an overview and includes incidence of handicapped children (7 percent to 12 percent of the population) a definition, types of school programs, and information relating to supply, demand, and the federal role. Described as major influences on requirements for SE personnel are definitions of the handicapped population and kinds of services the population needs. Personnel supply is discussed in terms of the quantitative and qualitative impact of federal legislation on the supply of qualified SE personnel, characteristics of current personnel, and SE training for regular classroom personnel. Assessment of future SE personnel requirements is said to depend on probable effects of educational trends and new approaches such as to improved data collection at the federal and state levels. Assessment of future SE personnel supply is said to depend on such factors as the funding of institutional training programs and strategies affecting training alternatives. Included in appendixes are lists of handicapping conditions by educational grouping and definition, and an alphabetical list of schools that did or did not receive federal funds to educate SE personnel during 1970 to 1971. (MC)

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THE EDUCATION PROFESSIONS 1971-72

Part III—Supply of and Demand for Special Education Personnel

U.S. DEPARTMENT OF HEALTH
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
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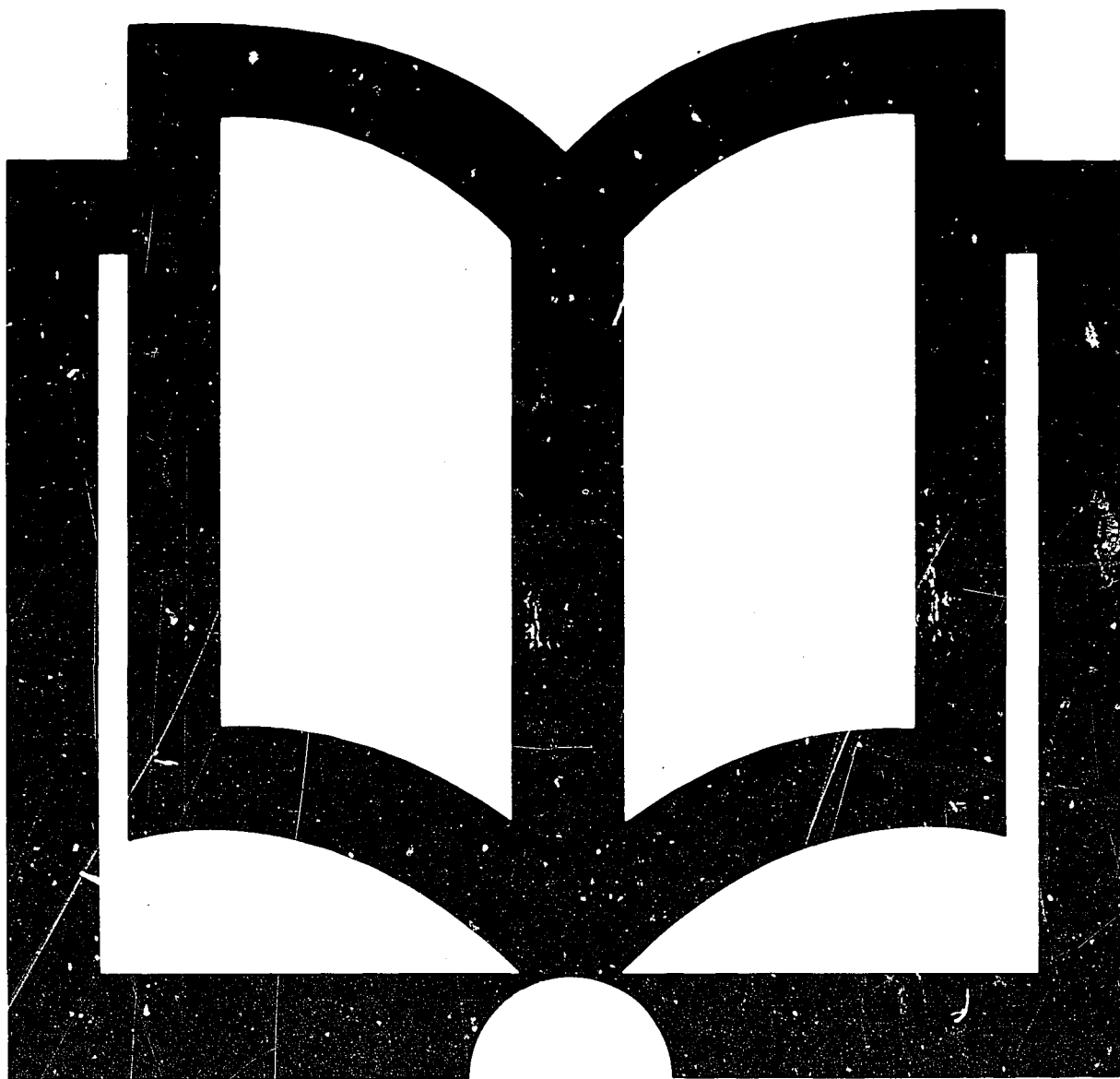
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THE EDUCATION PROFESSIONS 1971-72

An annual report on the people who serve our schools and colleges—1971-72—as required by the
Education Professions Development Act

Part III—Supply of and Demand for Special Education Personnel



U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

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Preface

The Commissioner's report on the state of the education professions is required to be published annually by the Education Professions Development Act. The 1971-72 report is being issued in four parts: Parts I and II, which concern the supply of and demand for teachers in public schools and in colleges and universities, and the state of the art of differentiated staffing, have already been distributed. Part IV will report on a manpower survey of the school library media field. This report—part III—examines the current supply of and demand for special education personnel.

As recently as 1959, the year when the Congress first acted to increase the supply of special education personnel, the special education situation in this country could have been described adequately in two words—not enough. There were not enough schools, not enough classes, and not enough teachers or auxiliary personnel. Today, one sign of the progress that has been made is that the bold description “not enough” no longer holds when applied to the needs of special education.

There are still huge gaps that must be filled, but there have also been tremendous gains. During the past 20 years, the number of children enrolled in special education programs has increased more than five times, with an accompanying increase in programs and personnel. In the late 1950's, only 70 colleges and universities trained students for careers in educating the handicapped; today, 400 institutions provide such training.

As programs for children and the training of teachers grew in number during the decade from 1959 to 1968, there was an increasing realization that while there was generally con-

ceded to be a shortage of special education personnel, there were no adequate data on which to base specific conclusions or projections for future needs.

In an attempt to provide some of the needed information, a survey entitled “Study of the Need for Educational Manpower for Handicapped Children and Youth” was carried out by Operations Research, Inc., Silver Spring, Md., under the auspices of the Bureau of Education for the Handicapped (BEH) in the U.S. Office of Education. The study had several important objectives.

The first objective was to define the factors that influence special education. This part of the study included an investigation of the data-gathering procedures used in each State to obtain information about the handicapped child population and the personnel and programs that serve these children. Each State's special education information was then compiled and presented in a report that included recommendations to improve data-gathering procedures. The impact of Federal legislation on the training of personnel also was evaluated and motivational factors affecting the personnel supply were analyzed.

All of this material was presented to BEH as a four-part study. The report that follows is a condensation of the study. The specific purposes of this report are to: (a) discuss the reappraisal of traditional definitions of various types of handicaps and the impact of these changes on special education personnel; (b) present key issues dealing with the demand for and supply of special education personnel; and (c) describe the Federal role in efforts to increase the supply of personnel.

In the pages that follow references to special education personnel are all-inclusive. The term includes classroom personnel such as teachers, therapists, assistants and aides, administrative

personnel and support personnel such as psychologists, social workers and counselors, in addition to training personnel used by the colleges.

ACKNOWLEDGMENTS

This report was prepared under the direction of Gerald W. Elbers, Chief of the Undergraduate Preparation of Educational Personnel Branch in the National Center for the Improvement of Educational Systems where responsibility for the 1971-72 report was assigned. The Bureau of Education for the Handicapped in

the U.S. Office of Education provided advice and assistance in planning the report and is responsible for developing the section on the Federal role. The contractor providing assistance in developing the report was Operations Research, Inc., Silver Spring, Md.

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CHAPTER 1

Introduction

While no one is sure just how many handicapped children there are in the United States, the most widely quoted figures set the number at 7 percent to 12 percent of the general population.

Part of the difficulty in determining the number of handicapped children stems from the wide disagreement over defining many less severe and less easily categorized impairments. Children known as "learning disabled," for example, may include those with a number of different kinds of impairments that are difficult to diagnose with precision.

Since there is no generally accepted, all-inclusive definition for the handicapped child, a broad working definition has been adopted and used for this report: "The handicapped child population includes all children with physical, mental, or emotional impairments that are sufficiently severe to prevent their achieving an education level consistent with their abilities without special education services." The so-called disadvantaged child is excluded from this definition because the disadvantaged or culturally deprived are generally considered to need remedial instruction and not special education as it is being discussed in this report.

Approximately 40 percent of the identified handicapped children today receive special education of some type. While it has been estimated that there are a large number of children whose needs are not being met, there is no real way of knowing just how many remain completely unidentified in terms of their impairments and special services needed. In 1969, a nationwide survey found a wide variety of programs operating in the public schools and the

following types of programs were found to be representative:

- Full-time special education in a residential school.
- Full-time special education in a day school that serves one type of handicapped child.
- Full-time special education in separate classes within a regular public school.
- Part-time special education for children who receive part of their instruction in regular classes.
- "Resource room" programs in which children spend much of the school day in regular classes but go out for some special instruction.
- Itinerant programs in which part-time special education is offered by traveling instructors who visit schools, homes, and hospitals.
- Consultant programs which combine full-time regular education with consultative services through which special education materials may be provided for handicapped children; assistance may be offered to the regular teachers and directly to the children.

In general it was found that two programmatic trends are emerging rapidly across the country: children are being placed in normal settings, in regular schools, more and more frequently; and there is increasing emphasis on the early diagnosis of handicaps and placement in special programs as soon as possible, preferably at the preschool level. The operating philosophy is that if children begin this training at the preschool level, they will rapidly

progress from full-time to part-time special education programs in a few years.

A careful distinction should be drawn between the *need* for special education personnel—a function of the total number of children identified as needing special education times the recommended ratios for each type of care—and the *budgeted demand* for personnel in the Nation's school systems. As is true in virtually every area of social service, more special educators are needed than school systems will budget for employment. An unusual factor affecting this situation in the field of special education is the recent increase in court decisions which have mandated that all children identified as needing special education must in fact be provided such education. The full effect of these decisions remains to be seen, but the immediate result surely will be to increase the budgeted demand in affected school districts and others to a figure closer to the identified need. (The distinction between need and demand in education was the subject of part I of the 1971-72 Commissioner's Report on the Education Professions.)

In view of uncertainty over future trends in budgeted demand in light of these court decisions and a gradually increasing level of appropriations, this report will focus on defining the general parameters of total need. The reader should keep in mind, though, that in almost all areas special education remains a shortage field. The demand for trained personnel far exceeds the supply. This condition is likely to continue for the immediate future, but longer range conditions are less clear. It is difficult to determine now whether the increases in demand stemming from the factors mentioned will outweigh the increases in supply, which can reasonably be expected as personnel from educational surplus fields shift into special education.

DEMAND FOR SPECIAL EDUCATION PERSONNEL

As of now, the personnel requirements situation is in a state of flux, reflecting various shifts in program emphases and a trend toward early diagnosis of impairments. But there are a number of general statements about personnel needs that can be made:

- Special education administrators are now more in demand.
- Consultants, supervising teachers, itinerant teachers, and resource room teachers will be more in demand in the near future.
- There will be increasing calls for para-professionals.
- More emphasis is expected on special education training for regular classroom teachers.
- There will be a large and consistent demand for personnel to work with children who have special learning disabilities. In some districts, this group of children still grows at an average rate of 250 percent.
- A severe shortage exists in personnel prepared to teach preschool children and this deficiency is expected to increase.
- There is a continuing shortage of personnel from minority groups, and especially from the bilingual groups.

Complicating the demand picture is the uneven geographical distribution of practicing personnel. In some States, 70 percent of the identified handicapped children receive special instruction; in others, only 10 percent of the handicapped population is served. And within States, there are wide variations in the services offered. In populous areas more services are generally available, and as a result these areas have greater needs for personnel. In rural areas there may be comparatively few identified handicapped children and little money for special services. As a result, these areas may offer few services or none at all. Further compounding the problem is the location of schools that prepare special teachers. Often they are in urban areas, sometimes removed from the areas with the greatest personnel shortages. And graduates, particularly women, are often reluctant to relocate away from familiar population centers even though available jobs may be elsewhere.

CHARACTERISTICS OF THE PRESENT SUPPLY OF SPECIAL EDUCATION PERSONNEL

In the preparation of this study, onsite visits were made in the fall of 1969 to each State special education agency. Data about the number of special education personnel were sought to enable analysts to calculate the personnel

shortage by subtracting those employment figures from the requirements generated by the number of children identified in each handicapped category and the recommended personnel/pupil contact ratios. In most of the States the data were either unavailable or very incomplete.

This lack of data makes detailed projections impossible. The data we have, though, indicate that personnel shortages persist in most special education fields.

Complicating the difficulties posed by the lack of nationwide data is the fact that there are wide differences in the range and completeness of the information obtained from the States:

- Definitions for various categories of handicapped children differ.
- Availability of and emphasis on special education programs vary from State to State.
- Fiscal attitudes toward these programs vary and often special education gets its "piece of the pie" through a complex fund-distribution formula.
- In some States, legislation mandating certain special education services at the local level has an unintended negative affect, especially in those instances where local agencies failed to identify and report handicapped children.

As a result of this data-gathering effort and a study of the impact of Federal legislation on institutions preparing special education personnel, a number of recommendations have been formulated for needed improvement in current programs and future projects on the Federal, State, and local levels. These are summarized as follows.

1. We should be explicit about what special education is and what it is not. It should *not* be a system that places major emphasis upon medical definitions, but one that is defined by special instructional systems that carry major implications for educational organization and teacher preparation. Instead of focusing attention on categories of handicap and special placements in schools based on those handicaps, the system should stress the functional competencies of children and their developmental needs.

2. Special education groups should pay major attention to becoming part of the mainstream of education. While legislation, the special bureaucracies, and parental groups devoted to various handicaps need to be preserved, the focus of efforts now needs to be pointed toward altering regular education rather than building a separate special educational system. To the maximum extent possible, special educators should seek to develop attitude and skills needed to accommodate the unusual needs of pupils within the regular classroom. When it is not possible to achieve the necessary climate and specialization of instruction in regular classrooms, other special arrangements will be made. It is desirable, however, that every special educator should see himself as a resource for his entire school and not simply as a teacher of a small group banded together on the basis of some medical handicap or behavioral attribute.

Special educators with knowledge of specialized types of instruction or techniques can help create a needed additional resourcefulness in regular teachers and can provide adjunct services to the work of the regular teacher. This assistance should be supplemented through inservice education. Through special summer institutes, workshops and similar inservice programs, the attitudes, knowledge, and skills of regular teachers can be changed considerably to allow them to more readily accommodate handicapped children in their classrooms.

In conjunction with such programs, administrative and organizational arrangements need to be made to allow the teacher time and energy to respond to the individual differences found in a classroom. To enable this type of change to take place, school administrators and even school board members should attend inservice programs.

3. Trainees should be more carefully screened before beginning their preparation in special education. Unrealistic views of the duties and problems in the field contribute to the loss of personnel during and after training.

4. Much more attention needs to be given to the development of policy regarding the developmental problems of infant and preschool handicapped children as well as those who are adolescent. Because only limited resources are currently being expended at those levels, there

is limited knowledge as to the best way to provide for the fullest development of handicapped children and their preparation for a productive adult life.

5. There is a definite need for improvement in data acquisition. If the precise nature of special education personnel demands were known, we might, for example, plan to increase audiologists in New England or to switch emphasis from speech to vision programs in the northwest. Also, if the locations of specific personnel needs were known, trainees could know in advance that they might have to relocate after the completion of training in order to find work in their specialty.

THE FEDERAL ROLE

The Federal role in special education has been one of rapid growth that still needs further expansion and careful evaluation. Federal efforts began in 1959 with grants to train the teachers of future teachers in special education in all of the States. Following that came a law which gave support to undergraduates studying to meet the needs of the deaf. Since that time we have come close to meeting personnel needs for deaf children in the schools.

In 1967, the Bureau of Education for the Handicapped (BEH) was established within the U.S. Office of Education; in 1969 came training programs for physical education and recreation leaders for the handicapped along with grant programs for the active recruiting of special education personnel; and in 1970, the Education of the Handicapped Act (Public Law 91-230) put together in one package all legislative authorities for the handicapped.

IMPACT OF FEDERAL PROGRAMS

It is estimated that, of all the current trainees in special education, almost half at the doctoral level, more than one-third at the master's level, and about one-tenth at the undergraduate level are receiving direct funding under Public Law 91-230. The latest data available on the results of such support showed that 93 percent of the recipients of Federal support in 1968-69 were engaged in activities for the handicapped.

In an attempt to measure the effect of Federal support programs, students and department chairmen at 207 universities receiving Federal support and 63 not receiving support were surveyed. The survey disclosed the following salient facts:

- Almost 50 percent of prospective educators receiving aid said that the availability of aid had an impact on their decision to enter the field of special education.
- Asked if Federal support had stimulated their universities to supply additional program funds for the special education training area, more than 75 percent of the department chairmen said "yes." The effects most frequently cited were increased funds for faculty, support staff, consultants, and lecturers.
- About 30 percent of the chairmen at the nonfunded schools reported that they received indirect benefits since they obtained additional support through Federal funds channeled through their State education departments.

CHAPTER 2

Nature and Extent of Current Special Education Personnel Requirements

Two factors, the definition of the handicapped child population and the description of the nature of the educational services that this population needs, are major influences on the nature and extent of the requirements for special education personnel. During the past few years, individuals at the Federal, State, local, and university levels have been defining and describing these two factors and evaluating their definitions in an effort to provide a better basis for special education services. There is some agreement among the experts with regard to the description of needed special education services. However, wide differences of opinion exist regarding the proper scope and definition of the handicapped child population.

Despite this lack of consensus, a set of classifications and definitions of the population to be served is required as the basis for identifying the types of personnel required by the field of special education as well as the source of these requirements within the handicapped child population. The nature of the special education personnel needed to provide the educational services comes directly from the population definition and the educational program description. In this section, the population definition factor, which has the stronger influence on the nature and the extent of the special education personnel requirements generated by educational services, will be discussed first.

POPULATION DEFINITIONS

The handicapped child population includes

all children with physical, mental, or emotional impairments that are severe enough so that these children need special educational services to achieve an educational level consistent with their basic abilities.

Before proceeding further with this definition, however, it is necessary to resolve one basic issue: the inclusion of children who are or who would be eligible for primarily custodial care. These children generally include the profoundly mentally retarded and the profoundly emotionally disturbed. They are usually placed in institutional programs operated by State health agencies, and the informality of the education they receive is pointed up by the fact that many State education agencies have little knowledge of these programs. In fact, State educational personnel contacted during a five-State survey early in 1969 were somewhat surprised when queried about the education of these children. Each State has responsibility for defining its own policy on the extent to which the educational system is responsible for educating these children.

Another policy issue relates to the breadth of the handicapped population which is used to calculate special educational personnel needs. There are four possible components of the total population:

- a. Children diagnosed as being eligible for and who are receiving special education.
- b. Children diagnosed as being eligible for but who are not receiving special education.
- c. Children identified by referral for diag-

nosis as being potentially eligible for special education.

d. Children who have not yet been identified, yet are believed to exist.

By definition, (a) and (b) are included in the population, but a problem is posed by (c) and (d). Within (c), only a portion of these children are eligible for special education after diagnosis. And for (d), the number of handicapped children believed to exist is an intuitive judgment, since the ways in which potentially handicapped children can be identified are inadequate for finding the true extent of this population.

It is expected that the "believed to exist" component will vary from one category to another. For example, there are comparatively few blind or deaf children who do not fall into one of the first three components; children with mild mental or emotional handicaps are much harder to identify.

To generate valid and realistic estimates of special education personnel requirements, the boundary of the handicapped child population should be defined to include all those diagnosed as being eligible for special education. The gap between personnel requirements based on the first two population components and the present personnel supply will still dramatize the seriousness of the personnel shortage without appreciably harming the preciseness of the measure. The gap between the personnel requirements based on all four population components and the present special education personnel employment figures will be even more dramatic. The nature and size of these gaps are discussed in detail later in this section.

Accomplishment of the second requirement (identifying the population components) is a task complicated by (a) the complexity of the population and its special educational needs, and (b) the number of methods available for classifying or defining handicapped children.

The complexity of the population and its special education needs are sometimes expressed as the "difficulties in putting children in boxes." The "difficulties" arise because children with different handicaps may be educated differently; and procedures may change as children advance through the education system. The fact remains, however, that some arbitrary classification of handicaps must be developed

if accurate estimates of personnel requirements are to be made.

Doing so effectively requires selecting a particular method of classification. Many dimensions are currently used: e.g., medical/physiological, legal, psychological, psychiatric, educational. In the past, most classification methods have been based on psychological and legislated medical dimensions. The resulting definitions of the handicapped child population, while administratively and diagnostically workable, did not consider the very differing educational needs of children within certain categories. As an example, consider the two categories "blind" and "partially sighted." A child who is diagnosed as "legally blind" may still be able to read print; i.e., large type. However, if such a child is placed in a class for the blind, his educational progress will be slowed and will be directly related to his ability to learn and use braille. In this example, if the child is educated using special printed materials, as is done in a class for the partially sighted, he will have a better chance to progress at a near-normal rate.

In 1968, a group of consultants working with the Bureau of Education for the Handicapped proposed classifications (presented in appendix A) based upon the educational dimension. The definitions of the categories in this classification refer only to children who are sufficiently impaired to be included in the handicapped population and, by definition, require special educational services. These categories include:

- Blind
- Partially sighted
- Deaf
- Hard-of-hearing
- Emotionally disturbed
- Mentally retarded
- Speech disorders
- Nonsensory physical disabilities
- Special learning disabilities.

Such a classification would result in a decrease in the number of children eligible for special education in some categories of the handicapped population (e.g. blind) and an increase in the number eligible in other subsets (e.g. partially sighted).

This classification also includes a subset that has only recently been widely used in the field

of special education—special learning disabilities (SLD). The addition of this category has resulted in an overall increase in the total number of children eligible for special education; many of the children having this handicap were previously left to their own devices in a normal classroom because their problem was not formally diagnosed. Specifically, the establishment of this category, the increase in overall diagnostic services available in most local education agencies, and the increasing sophistication of diagnostic techniques has caused annual increases in the number of children eligible for special education in special learning disabilities and corresponding increases in the number of SLD special education personnel required. These newly diagnosed children did not all come from the normal child population; a significant number of them were misdiagnosed as belonging to other categories (mildly retarded, mildly emotionally disturbed). Correction of this condition has led to a decrease in the size of some of the previously existing categories and a corresponding decrease in the numbers of special education personnel required by these children. The methods and problems associated with the creation of the supply to satisfy the requirements for this new type of personnel are discussed in subsequent sections.

DESCRIPTION OF SPECIAL EDUCATION SERVICES

After identifying and defining the major handicapped population subsets that generate special education needs, these educational needs must be translated into specific personnel requirements.

First, the kinds of special education services must be established. The obvious criterion is that the service requires the employment of some type of special education personnel, regardless of the actual man-hours needed to perform the service. This definition establishes a wide range of possible levels of service, ranging from one in which the special education personnel serves the children on a full-time basis to one in which the special education personnel serves as a consultant to regular education personnel who have handicapped children in their classes. It also establishes a

wide range of possible staffing patterns employed to perform the special educational service.

Second, each of the educational program types which generate requirements for diverse special education personnel must be identified and defined. A survey of the 50 State education agencies, conducted during the fall of 1969, indicated that a multitude of educational programs are currently in operation. Although a child used to be forced into a single educational program setting, some local education agencies are currently offering two or three types of programs simultaneously to many handicapped child categories.

The following seven programs are representative; each program generates different requirements, in terms of both numbers and types, for special education personnel.

a. *Residential Special Class Program.*—Involves full-time special education in a residential school. Personnel requirements differ from regular day school special classes in terms of the number and types of ancillary personnel required.

b. *Special Schools Program.*—Involves full-time special education in a day school that serves children with only one type of handicap.

c. *Day Special Class Program.*—Involves a full-time special education class, usually in regular public schools.

d. *Cooperative Special Class Program.*—Involves part-time special education. In this program, handicapped children are generally enrolled in special classes, but receive at least some portion of their instruction in regular classes.

e. *Resource Room Program.*—Involves part-time special education. Handicapped children are enrolled in regular classes in which they receive much of their instruction; some special education is also provided in a resource room.

f. *Itinerant Program.*—Involves part-time special education conducted in schools, homes, and hospitals, for example. When conducted in school, the children who are enrolled in regular or special classes also receive some special education from itinerant instructors.

g. *Consultant Program.*—Involves full-time regular education in combination with special education consultative services. Special educational materials may be provided for the handi-

capped child; consultation is provided to the regular education teacher and may also be available to the child.

Increasingly, the trend has been toward placing handicapped children in as normal an educational environment as possible and returning these children to regular education as soon as possible. Two considerations are currently influencing the placement of handicapped children in educational programs. First, quantitatively, the total amount of special education services is increased by this trend of child placement. This is of minor educational importance but, due to the extent of the current special education personnel shortage, is of major practical importance. The second consideration is that a given classroom special educator can serve more handicapped children in a part-time educational program than in a full-time one.

This is a complex issue which has numerous educational programming implications. Basically, it involves a dramatic shift in programming emphasis from the single special education teacher/child/classroom orientation to a full continuum of services. Such a change requires different types of special education personnel which in turn requires different training. In addition, the handicapped child is likely to find himself in a greater variety of classroom situations during the school day.

There is an increasing belief that most handicapped children who are entirely segregated from normal children (i.e., remain in a full-time special education program) tend to develop emotional disturbances and that these children therefore will make a better long-term adjustment if they are educated with a normal peer group.¹ These disturbances, brought on by the realization that they are "different" and by the feeling that they are being "left out," adversely affect their academic performance. The consequence of this belief—that the overall quality of special education services is increased by placing the handicapped child in the normal classroom for as much of the day as possible—has been fairly widely accepted by local education agency administrators.

It should be observed, however, that this trend has put increasing demands on regular classroom teachers, many of whom feel ill-equipped to educate handicapped children. The

Office of Education is attempting to improve this situation by training limited numbers of leadership personnel who in turn train regular classroom teachers (see chapter 3), but improvement by such means will inevitably be slow. As the trend toward placement of handicapped children in regular classroom accelerates, there will be increased need for training directed at regular classroom teachers.

The combined emphases on the early placement of handicapped children in special education and on the flexibility of placement in educational programs have enabled children in some categories² to progress from full-time to part-time special education within a few years, and have enabled some to eventually return to a full-time regular education program, requiring only a special education consultant. This current trend toward early placement and an increasing amount of regular education as the child progresses through grade levels has increased the requirement for special education classroom personnel at the preschool and elementary grade levels and has held demand almost constant, relative to the growth rate of the total school-age population, at the intermediate and secondary grade levels.

The greatest relative increase in personnel requirements for the applicable subsets has occurred recently at the preschool education level, as a result of the increase in the rate at which these children are being diagnosed as being eligible for special education services. Partially due to the time lag involved in producing the supply of these personnel, the special education classroom personnel shortage at the preschool level is currently increasing at a more rapid rate than at any other level; and it is expected that this trend will continue for many more years—until the rate of diagnosis of these children is almost equal to the rate of total child population increase at that education level.

At the elementary level, the rate of increase in special education classroom personnel requirements has remained relatively constant. Historically, the emphasis has been on diagnosing the children as handicapped soon after they enter the school system at that level. Thus, the rate of increase in these personnel requirements has tended to parallel the rate of increase in diagnostic services provided to the

children at the elementary level. The greater emphasis recently placed on diagnosing these children has increased both of these rates. Similar to the situation at the preschool level, this trend can be expected to continue for many years, until stabilization occurs between the diagnostic rate and the population growth rate.

The handicapped subset that has had the most dramatic growth rate at the elementary level during the last 5 years is special learning disabilities. In many local education agencies, the subset's average annual rate of increase still exceeds 250 percent. Although this rate is expected to decrease substantially in the near future as a majority of the children having learning disabilities are diagnosed, the current extensive personnel shortage resulting from the dramatic increase in identified children will continue to exist for many years.

As recently as 5 years ago, there was a scarcity of special education services available to the older children in the handicapped child population subsets; thus the quantitative personnel shortage at the intermediate and secondary levels, calculated on the basis of the number of children eligible to receive special education at those levels, was great. In recent years, with the exception of the special learning disabilities and the orthopedically handicapped subsets, the requirement for special education classroom personnel by these subsets at these levels has increased at a faster rate than the requirement for personnel to serve the elementary level. For example, most local education agencies have experienced a 5-year growth rate of about 200 percent for the hard-of-hearing subset at the elementary level. At the same time, the number of children in this subset at the secondary level has increased about 500 percent at these agencies. But, due to the increased emphasis on part-time special education programs at the upper education levels and on vocational education for handicapped children at these levels, the rate of increase in personnel requirements is currently slowing, causing a relative easing of the personnel shortage at these levels compared to the shortage existing at the preschool and elementary levels.

Due to an increase in the proportion of many subsets that are, or should be, served by each

part-time special educational program, and due to the different staffing patterns of these programs, the requirements for ancillary personnel are increasing at a faster rate than the requirements for teachers. But, quantitatively, the requirement for teachers for these part-time programs will remain greater than those for assistants and aides as long as the part-time educational programs focus primarily on the teacher. The shortage of special teachers is and will remain greater than that of the ancillary personnel because of the relatively short time period needed to produce a supply of the latter to fulfill any generated requirements.

There have been two other important effects of this trend toward placing handicapped children in as normal an educational environment as possible. The first has been the increased involvement (and therefore requirements for) and importance of special education administrative and support personnel, especially in the initial placement phases. These administrators, knowledgeable about and oriented toward this trend, are required at the local education agency level to organize and introduce new educational programs into the special education curriculums and to expand existing ones when necessary. The calculation of the number of such administrators required should be based upon not only the number of classes provided for each handicapped child subset, but also on the complexity of the set of educational programs offered by the local education agency. Because of this method of calculation, the rate of increase in the administrative personnel requirements cannot be directly related to or compared with the rate of increase in the special education classroom personnel requirements, even though the latter is based on both the rate of growth of the handicapped child population and the changes in the proportion of each population subset eligible to be served in each educational program. Requirements for special education administrators have increased and will continue to increase at a faster rate than the increase in the handicapped child population as the educational program offerings at the local education agency level become more complex.

During the initial phases of handicapped child placement in existing educational programs, one or more types of special education

support personnel (psychologists, social workers, and counselors) are helpful to ensure that each child is recommended for the proper program. The trend toward serving a child in a progression of special education programs has increased the quantitative requirements for support personnel generated by a given number of handicapped children.

This leads us to the second important effect of the trend toward placing handicapped children in as normal an educational environment as possible—the increased requirements for regular classroom personnel who are capable of handling these children. One example of a handicapped group whose associated personnel requirements have been dramatically reduced by this trend is the orthopedically handicapped at the secondary level. Many local education agencies are strongly emphasizing the return of these children to full-time regular education, with the results that the subset population is declining, that there has been a corresponding decrease in the associated special education personnel requirements in this area, and that there has been an increase in the requirements for regular education personnel trained to work with these children. For all of the handicapped child population subsets, not only are more regular educators needed who are able to deal effectively with the handicapped children in their classrooms, but more and better teamwork is also needed between the regular and special educators (classroom and support personnel) to better serve the educational needs of the children.

NEED VS. DEMAND FOR SPECIAL EDUCATION SERVICES

The preceding discussion has focused on analyzing the components that go to make up the national need for special educational personnel. From a practical standpoint, however, the value of such generalized estimates is questionable. In point of fact the demand for special educational personnel, or for any type of educator, is a function of available resources and budgeted demand, not estimated need.

This demand, furthermore, varies from place to place and year to year. Such factors as enabling legislation, financial resources, and agency policy tend to become fully as important

as the numbers of children identified as needing special education. Data of this kind are far harder to project with confidence than are figures of need. Nevertheless, some type of analysis of this process is essential for realistic policy decisions and determinations of priorities. An overall estimate of requirements for 30,000 additional speech correctionists and 20,000 additional teachers of the emotionally disturbed, for example, would provide only limited assistance in the decisionmaking process. Any priorities that could be derived from such estimates might well be inconsistent, either geographically or occupationally, with the actual plans and capabilities of State and local agencies.

To ensure the relevance and efficiency of programs designed to alleviate personnel shortages, current information indicating the actual priorities of State and local agencies must be gathered frequently. Efficiency in making priority judgments would be further enhanced if policymakers could relate this information to specific geographic areas. Not only does the special education personnel shortage vary greatly from one geographic area of the country to another, it often varies greatly within the jurisdiction of the larger local education agencies (inner city vs. suburbs).

Although the BEH 50-State survey conducted in 1969 was not able to collect specific data by geographic area, the State and local special education administrative personnel indicated that current personnel shortages are most acute in rural areas. These are conservative estimates using only the number of presently unfilled positions (including those positions filled by unqualified/uncertified personnel). However, further study of the situation in inner cities may be warranted to verify the acuteness of their personnel shortages.

THE AVAILABILITY OF DATA

It is a truism that policy is made on the basis of information on hand. A corollary to this administrative fact of life, though, is that policymaking does not stop when the data are inadequate: hunches, guesses, and intuitive feelings take the place of objective data under the necessity for action. Such policies may turn out to be successful; they will almost certainly

turn out to be disjointed—especially in a field like education which is controlled by largely autonomous State and local agencies. One of the first steps in analyzing and improving the effectiveness of policymaking, therefore, must be to survey the existence and availability of data.

Existence and availability are purposely separated for emphasis. Although data may exist in some fashion at the local level, the data are useless for policy decisions unless aggregated. For example, data about the children eligible for special education may exist in the form of records for each child, but for all practical purposes are unavailable if the aggregated totals of the numbers of children in each subset at each educational level are not available to those with the responsibility for determining public priorities.

The 50-State survey demonstrated that data availability was inconsistent both across States and within a State. Thus, a complete, valid quantification of the requirements for special education personnel could not be made for any of the States. A great variety was found in those administrative facets of handicapped child education which affect the flow and utilization of special education information. The variables that were found to affect the data availability and development potential are discussed in the subsequent paragraphs.

Responsibility for the education of handicapped children is almost always distributed among at least two State agencies. Most frequently involved, in addition to the department of education, are the departments of public health, mental health, and social welfare, and autonomous State institutions. Guidelines generally exist for the assignment of a child to any one of the services, but they are not always well defined. The resulting fractionalization of educational services often leads to ill-coordinated efforts and inadequate coverage; at the same time this condition makes remedies more difficult by limiting the flow of information. Each additional agency, autonomous institution, and private facility responsible for special education adds to the complexity of establishing data-collection procedures and data consistency. Because of possible variance in personnel qualifications specified by each agency, etc., increased fractionalization also makes it more

difficult to produce consistent estimates of personnel requirements.

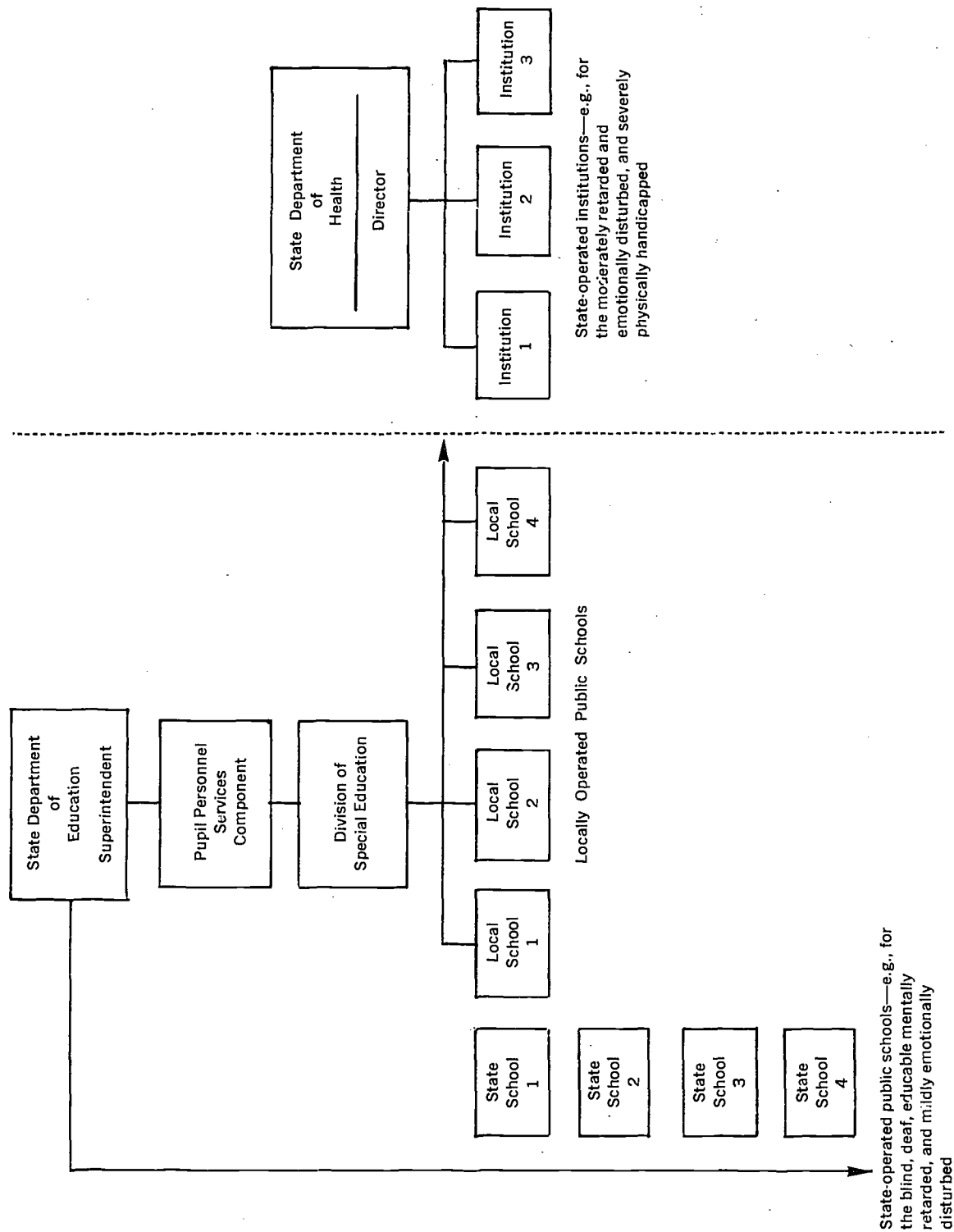
The organizational hierarchy and function of the individual State special education agencies also have an important bearing on the information flow (see figure 1). The State special education agency serves the State's public school system and almost always has additional responsibilities in other areas (e.g., State schools and institutions, private facilities), depending upon individual State legislation. These responsibilities include the reduction of special education personnel shortages. Insofar as the determination of special education personnel requirements is concerned, the organizational structure, of which the special education agency is a part, is important only in that it reflects the ability of the special education staff to influence personnel planning and data gathering from the private schools and other State agencies and private facilities.

The functions of the special education agency also vary widely from State to State. The range of legislated responsibilities may range from practically no responsibility to almost complete control of the State's education effort for handicapped children. Agencies may:

- a. Oversee distribution of funds, exercising only enough control to obtain information upon which to base fund disbursements;
- b. Provide guidance to local education agencies for the formulation and development of special education programs, which entails more involvement at the local level and a better knowledge of local procedures, definitions, and facilities.
- c. Enforce State special education regulations pertaining to diagnosis and establishment of classes, approval of curriculum content, teacher approval, individual child applicant approval; this may also include provision for coordination with other State agencies and private facilities involved in the education of the handicapped.

The functions for which the special education agency is responsible were found to correlate highly with the information that is made available to it. Frequently, the functional responsibility of the special education agency was found to dictate the level of data available, since little more than the data required by the agency is collected or aggregated.

Figure 1
TYPICAL STATE ORGANIZATION OF SPECIAL EDUCATION PROGRAMS



In many of the States visited, it was found that the information available to the special education staff was inadequate for their planning and evaluation needs, even without consideration of the personnel requirement estimates.

One basic difficulty is the set of definitions applied by the State to the handicapped child population. Not only do the sets differ from State to State, but even the definitions of the basic handicapped child subsets may vary among the States. The definitions are statistically important because they define which children are served by a specific type of special education program; this in turn affects the special education personnel requirements.

Another condition is the specification of the handicapped child subsets served and the educational programs available to serve them. The availability of and emphasis on each of the many possible special education programs vary among the States. The educational program mix (types and extent of each type) that a State utilizes has an important effect on the extent of special education personnel requirements because personnel/pupil contact ratios may vary from program to program by the handicapped child subset served.

The survey also discovered that various fiscal attitudes toward special education exist among the States. The State agencies are in competition with each other for the allocation of the available State funds. It is not unusual to have a State's special education budget controlled by some fund distribution formula that gives special education its "piece of the pie" rather than by the services needed. This, of course, reflects on the State's motivation to quantify personnel requirements because it introduces another dimension into the overall problem of satisfying these requirements. Here, however, good information and valid quantification of these requirements can be most useful in presenting factual evidence to support service requirement claims.

In some States, the existence of mandatory legislation in the area of special education is an important limiting condition. However, this type of legislation often serves at cross purposes. Its objective is to ensure education services to the handicapped by specifying that when a community has a certain number of children requiring special education, it must

arrange to provide it. However, funds frequently are not budgeted at the local level to provide the needed services, and the local agencies do not identify handicapped children. This slows the diagnostic process and seriously distorts the true measure of the number of children eligible for special education. In States where mandatory legislation exists, the State education agency should build in some incentive for the local agencies to set up the needed special education programs. In addition to the distortion of the diagnostic rate, under mandatory legislation, it is difficult to get an accurate measure of the handicapped child population, and thus, an estimate of the special education personnel requirements of a state.

The "local vs. State" sponsorship characteristic becomes important when local sponsorship of services deprives the State of any flow of information pertaining to special education efforts. In some States, special education programs must receive the approval of the State agency regardless of the source of sponsorship, while other States pride themselves on the local autonomy of their special education programs. The net effect of this characteristic on the quantification of personnel requirements actually depends upon the communication that exists between local and State levels.

The final condition affecting the flow and uses of special education information is the population density/dispersion. In some States there are areas so sparsely populated, and the geographic distances between even small population centers are so great, that regular education service poses a problem, to say nothing of special education. In such areas handicapped children either receive no services or the services of a regular education teacher who, if the child is fortunate, will have had at least some special education training or guidance. These problems must be considered when an educational program mix is proposed and corresponding special education personnel requirements are calculated. Education of children in these areas may have to be assigned a new educational program description, as the State's normal personnel/pupil contact ratios cannot apply because of the low possibility of finding enough children with the same handicapping condition for even a minimum-sized class within a feasible transportation range.

In recent years, State and local agencies have become increasingly aware of the utility of improved data collection. This awareness has led to the improvement of data-gathering procedures in almost every State. With continued attention to the problem, it can be expected that within a few years planners and administrators will have a much more adequate basis for evaluation and policy decisions in special education.

FOOTNOTES

1. The exceptions include the children in the moderately and severely emotionally disturbed, and the moderately, severely, and profoundly mentally retarded subsets, and the more severe cases in the nonsensory physical disabilities subset.
2. Partially sighted, hard-of-hearing, mildly mentally retarded, mildly emotionally disturbed, special learning disabilities, and orthopedically handicapped children.

Nature and Extent of Current Special Education Personnel Supply

Any discussion concerning personnel supply must center upon the two major factors which define this population. The first is the identification and description of the training programs that generate the supply of special education personnel. The second, the identification and description of the characteristics (personal and professional) of the supply, is strongly influenced by the characteristics of those training programs and their recruiting strategies.

THE FEDERAL ROLE

An examination of past, present, and projected special education requirements and the availability of personnel to satisfy these requirements indicates a continuing problem. For many handicapped population subsets, it is estimated that, for each professional person currently prepared, at least four are needed. The Federal Government, through the Office of Education's Bureau of Education for the Handicapped, (BEH) has played and is continuing to play a major role in attempting to alleviate this personnel shortage. One of the first major efforts supported by the bureau, the preparation of special education personnel in preservice and inservice training, has been given a very high priority among programs for the handicapped.

The first Federal legislation directed toward increasing the supply of qualified special education personnel was Public Law 85-926, passed in 1959. Eligible participants under this grant awards program are institutions of higher education and State education agencies in all

States, including Guam, the Virgin Islands, American Samoa, Puerto Rico, and the District of Columbia. The purpose of the original legislation was to encourage expansion of teaching in the education of mentally retarded children through grants focusing on trainers of teachers. The leadership professional personnel trained under such grants were expected then to train classroom teachers.

Under Public Law 87-276 the 87th Congress authorized financial support for the training of teachers of the deaf. Unlike the earlier legislation in the area of mental retardation, which focused on the training of leadership personnel, this new law emphasized the training of classroom personnel and, in fact, established one of the earliest student support programs at the undergraduate level within the U.S. Office of Education.

The training effort was expanded in 1963 with the enactment of Public Law 88-164, which amended the original Public Law 85-926. This act combined the authorities for training special education personnel in the areas of mental retardation and deafness, and expanded the definitions to include the training of personnel to provide special education, speech and hearing, and related services to all types of handicapped children.

In 1967, two very important acts were passed by Congress. Public Law 90-170, in the Mental Retardation Amendments of 1967, added authority for training personnel in the area of physical education and recreation for the handicapped. Public Law 90-247, in the amendments to title VI of the Elementary and Secondary Education Act, provided authority to

make grants for the recruitment of personnel in the education of handicapped children. The Bureau of Education for the Handicapped was established in the same year.

As a result of the aforementioned Education of the Handicapped Act (Public Law 91-230) and previous amendments to Public Law 85-926, the Federal financial support of special education training efforts has been expanded to include training in 12 program areas¹ for all personnel, subprofessional and professional, at undergraduate through doctoral levels.

The following basic types of Federal grants are awarded to institutions of higher learning and to State education agencies:

a. Undergraduate Traineeships.—For full-time study at the junior or senior level

b. Graduate Traineeships.—To assist colleges and universities in the preparation of professional personnel at the master's and post-master's levels

c. Summer Session Traineeships.—Full-time summer study for inservice education, not to include presessions, postsessions, and intersessions.

d. Special Study Institutes.—Multipurpose training vehicle that can be held for various types of personnel at various levels for various periods of time

e. Special Project Grants.—For planning, trying new models of training, and evaluating their effectiveness and efficiency.

The primary focus of these grants has been to prepare trained classroom personnel to serve handicapped children as well as leadership personnel at the university, State, and local levels. The need for leadership personnel, which was so critical in 1960, to accomplish the training of large numbers of classroom personnel has been substantially reduced by this program. The capability for special education personnel training in colleges and universities has been greatly expanded and the potential for preparing a large number of these personnel has been greatly enhanced.

The authorized funding for the Grant Awards Program has increased from \$1 million in fiscal year 1960 to \$32.6 million for fiscal year 1971. There are now more than 1,000 programs in 304 colleges and universities receiving support under this program. About 400 colleges and universities in all provide

special education training. Appendix B lists the colleges and universities that had a program of special education during the 1970-71 school year. This list differentiates between the schools that did and did not receive Public Law 85-926 funds during that year.

In fiscal year 1970, more than 13,650 persons received part-time training under this program. Since the passage of Public Law 85-926, over 425 program development grants have been awarded to institutions of higher learning, more than 31,650 undergraduate and graduate students in special education have received assistance, over 10,000 special educators have participated in summer institutions to improve their skills, and close to 37,000 persons have participated in special study institutes conducted by individual State departments of education.

It was estimated in 1969 that, of all trainees then in special education, almost half of those at the doctoral level, more than one-third of those at the master's level, and about one-tenth of those at the undergraduate level received direct funding under Public Law 91-230. The only quantitative data available at this time regarding results of the Federal grants come from a sample survey conducted by the Division of Training Programs covering award recipients studying during academic year 1968-69. It showed that in 1969 approximately 93 percent of the recipients were engaged in activities for the handicapped.

Through the Grant Awards Program, BEH has promoted the increased utilization of inservice training programs, covering a broad range of activities, to satisfy two needs of the current supply of special education personnel. The first need is to provide initial instruction to the large number of classroom and other personnel without appropriate training who are being employed to serve handicapped children. These personnel often need extensive training in order to reach minimally acceptable levels of preparation. The second need focuses on those personnel employed as teachers of the handicapped who have full credentials, but who require updating of their information and skills in order to keep abreast of educational improvements in special education. Short periods of intensive study often result in ex-

tensive improvements in classroom instruction by these personnel.

The number of trainees participating in BEH-sponsored inservice training programs at institutions of higher education and State education agencies has increased steadily since 1965. The inservice training is supported primarily by two types of the aforementioned awards, summer traineeships and special study institute traineeships. Although the majority of summer traineeships are for inservice training, a few of these awards are for preservice training.

Because State education agencies are encouraged to emphasize inservice education or continuing preparation rather than preservice preparation, their applications for the Grant Awards Program usually reflect greater utilization of funds for summer session and special study institute traineeships. Examination of some of the data about this utilization reveals several trends. State education agencies are moving away from support of master's level students; support for summer traineeships appears to have stabilized at about 2,250 students per year; and there has been a dramatic increase in the number of traineeships awarded for special study institute participants—1,024 in 1965-66 to 11,257 in 1970-71.

Institutions of higher education also award summer and special study institute traineeships. Since 1967, their support for summer session traineeships has stabilized at about 600 students per year. The number of special study institute traineeships that they have awarded ranges from a low of 243 in 1966 to a high of 1,370 in 1970, with no clear trend indicated.

A series of National Special Study Institutes, sponsored directly by the Division of Training Programs in BEH, has contributed substantially to inservice training of special education personnel. While some of those institutes provided training for paraprofessional personnel through on-the-job training activities and some emphasized updating the skills and knowledge of leadership personnel, many of those institutes concentrated on identifying, defining, and coordinating activities necessary for updating the skills of classroom and other direct service special education personnel.

Through a series of special project grants, 17 university-affiliated facilities have worked

to develop an interdisciplinary training program, whereby professional personnel in the medical and social sciences receive instruction regarding the educational problems of handicapped children. In this manner, professionals in other disciplines receive current, accurate information about educational services available to handicapped children. These professionals can then contribute their expert services in a manner which complements and enhances the education program.

QUANTITATIVE IMPACT OF PUBLIC LAW 85-926 FUNDS ²

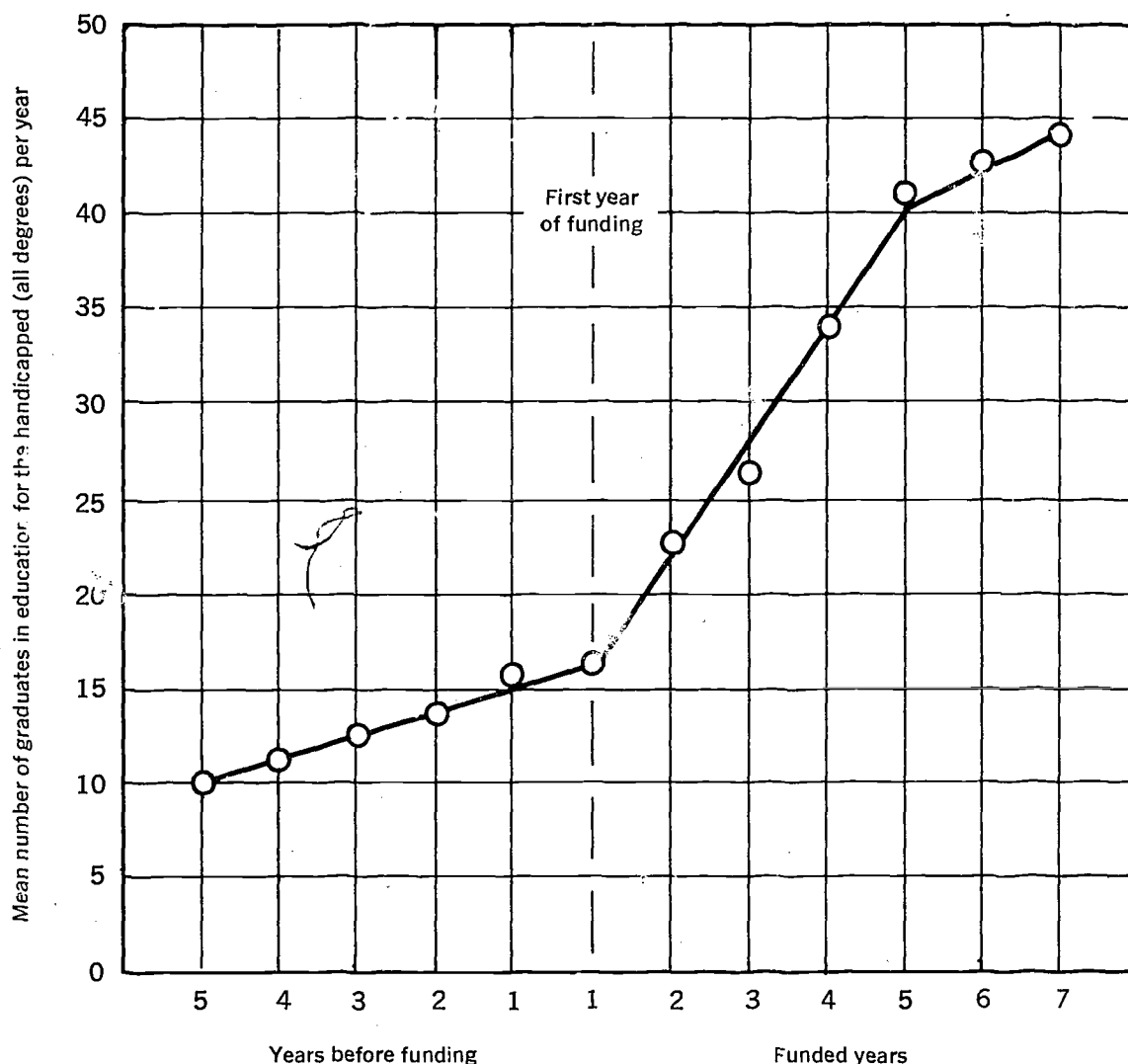
The impact of Public Law 85-926 funds on the annual volume of graduates in education of the handicapped is clearly demonstrated in figure 2. This figure illustrates the rate of increase in the mean number of graduates of a university per year for a 5-year period prior to Public Law 85-926 funding through a 7-year period after funding, regardless of their actual reference year. Thus, each point in figure 2 does not represent any real year, but a composite of all years relative to the "first year of funding."

These findings indicate that the mean annual output of nonfunded schools which were eventually to be funded grew at the relatively slow rate of one graduate per year. Federal funding increased that rate sixfold for the first 4 years of funding. For the fifth and sixth years after initial funding, the growth rate returned to the prefunding level as facility saturation was approached.

The high rate of growth in the number of graduates in the few years after funding correlates with the progressive utilization of the new facilities. Thus, as utilization approaches the maximum, this growth rate tapers off to approximately the rate in prefunding years. It must not be assumed, however, that Public Law 85-926 funds have lost their usefulness at a school after 4 or 5 years; at that point, the use of the funds is shifted toward increasing the quality of the educational experience.

By degree level, the increase in the number of doctorate degrees conferred within a program area was not affected appreciably by funding which remained relatively constant.

Figure 2
MEAN GRADUATES PER YEAR ACROSS UNIVERSITIES
BEFORE AND AFTER PUBLIC LAW 85-926 FUNDING



However, Public Law 85-926 funding produces a pronounced impact on the number of master's level graduates within a program area during the first few years of funding; the rate of this increase diminishes each year as the program reaches maximum capacity. As would be expected, due to the longer time required by a student to complete a bachelor's level program, the impact of Public Law 85-926 funding on the rate of increase in the number of bachelor's degrees conferred is not evident until the third year after initial funding.

Within degree levels, there is a significant difference between the increases in full-time and part-time graduate student enrollment. These increases are approximately equal within each degree level immediately after initial funding but diverge during subsequent years. At the doctorate level, the number of full-time students increases at a much higher rate than the number of part-time students. The opposite is true of the increases at the master's level. This tremendous increase in the number of part-time master's level students is an im-

portant variable to be considered in current, as well as future, special education personnel policy affecting this component of entrance.

The study showed that the availability of Federal financial aid influences some people's decision to enter special education training and, specifically, aid under Public Law 85-926 has attracted an increased number of high-quality people to the field. It is known that good students often have several career interests from which to choose their life's work. In fact, it has been shown that the more gifted a student is, the more difficult it becomes to make a career choice.³ In this situation, mediating factors such as available financial support became important.

At schools having programs supported by Public Law 85-926, almost 50 percent of the students receiving Public Law 85-926 financial aid responded that the availability of that aid had an impact on their decision to enter the field of special education. On the other hand, 80 percent of the students not receiving financial aid indicated that the amount and kind of available aid had virtually no impact on their decision to enter the field. The plausible conclusion is that a significant number of students who receive Public Law 85-926 aid would not have entered the field without the aid. Other findings of the study indicate that this would be a serious loss to the field of special education because of the generally high quality of students receiving this financial aid.

When queried as to whether Public Law 85-926 funding has stimulated the university to supply additional program funds for the special education training area, over 75 percent of the responding department chairmen and over 70 percent of the responding program area directors said "yes," with the effect most frequently cited being "increase in funding for faculty, support staff, lecturers, consultants, etc." The responding program area directors also emphasized the quantitative impact of Public Law 85-926 in contributing to the supply of well-trained practitioners, leadership personnel, and support staff and in allowing the development of new programs while strengthening existing ones by improving the staff.

By selectively funding specific training program areas, BEH has used Public Law 85-926

to influence the number of each type of personnel graduating into the special education personnel supply. Table 1 illustrates the relative distribution of Public Law 85-926 funded and nonfunded program areas during the 1969-70 school year. For years, the proportions of training programs offered in the areas of mentally retarded, visually handicapped, and deaf have been significantly different from the corresponding proportions of handicapped children assumed to be eligible for special education in those population subsets. Recent studies have shown that in the area of the deaf the number of available special education personnel comes closer to meeting the needs of all children than in other handicapped areas. All indications are that the personnel shortage in the area of the deaf is largely geographical in nature and that in urban places there is currently an oversupply of personnel in this area.

Conversely, table 1 also shows that there was, and still is, a disproportionately low number of training programs in the areas of emotionally disturbed and speech and hearing, but that by increasing the proportion of funded programs in those areas, Public Law 85-926 has had the effect of increasing the relative number of graduates in those two areas during the last few years. Further implications of the current and future selective funding strategies are discussed later.

It is interesting to note that all of the respondent programs in the area of special education administration were funded by Public Law 85-926. This reflects the current priority on increasing the much needed supply of special education administrators.

One of the recent priorities that does not show up in table 1 is increasing the supply of personnel in the area of special learning disabilities. Due to the methods and problems associated with the creation of a supply of personnel in a new program area, many training programs in that area do not attain a quality that attracts funding in the first few years of operation. The reasons for this are based on the fact that there is a timelag from the identification of personnel requirements to the generation of qualified personnel to satisfy them. Thus, since the area of special learning disabilities is still relatively new, there is a scarcity of fully qualified personnel trainers.

Table 1.—DISTRIBUTION OF SPECIAL EDUCATION PROGRAM AREAS OF SURVEY RESPONDENTS, BY 1969-70 PUBLIC LAW 85-926 FUNDING STATUS, AS COMPARED WITH ASSUMED DISTRIBUTION OF HANDICAPPED CHILD POPULATION

Program Area	Funded	Percent of Total Program Areas		Percent of Handicapped Child Population*
		Non-Funded	Total	
Visually handicapped	3.0	1.54	2.6	1.0
Deaf	9.5	2.31	7.7	0.75
Mentally retarded	35.0	46.92	37.9	23.1
Emotionally disturbed	11.0	4.62	9.4	20.1
Special learning disabilities	5.25	10.77	6.6	10.0
Orthopedically handicapped	5.75	6.92	5.8	5.0
Speech and hearing	26.0	20.77	24.7	40.1
Multiple and interrelated	1.5	6.15	2.6	**
Administration of special education	3.0	0	2.2	—
Total	100.0	100.0	100.0	100.0

*Based on U.S. Department of Health, Education, and Welfare published figures, 1968.

**Data not available.

This had led to the organization of new training programs that have had to rely on their post-master's and their doctoral level students to carry much of the training load for the first few years of the program's operation. Compounding this problem of generating a sufficient number of graduates in the area to become personnel trainers, much less to become practitioners, is the fact that it takes time for a new area to gain the public awareness needed to increase the number of applications, the number of students enrolled, and subsequently the number of graduates. Thus, the trend toward increasing the number of programs receiving Public Law 85-926 funds within the special learning disabilities area was not evident in a recent cross-sectional view of funding distribution.

QUALITATIVE IMPACT OF PUBLIC LAW 85-926 FUNDS

The aforementioned study enabled BEH to identify the qualitative impact of Public Law 85-926 funds on special education training programs. Among the beneficial effects most often mentioned by the responding department chairmen at funded schools was the increase in the numbers of qualified faculty, support staff,

and so forth, which led to an increase in the quality of their programs. Somewhat surprisingly, over 70 percent of these department chairmen could not identify any detrimental effects of Public Law 85-926 funding. When queried as to whether Public Law 85-926 funds stimulated program growth, 95 percent of the responding program area directors answered affirmatively and emphasized two qualitative explanations:

- Increased program status within the department and the university; and
- Improved public image leading to increased enrollment.

The qualitative impact of Public Law 85-926 funding on training programs has not been restricted to those at funded schools. Over 30 percent of the department chairmen at non-funded schools indicated that Public Law 85-926 has had an impact on their programs. About one-third of these said they received Public Law 85-926 funds indirectly through their State department of education. The impact of Public Law 85-926 on these programs has also been due to the generally improved standards in the field of special education directly or indirectly attributable to the law.

Interesting results were obtained for the

questions about the effectiveness of undergraduate traineeships and graduate fellowships in putting high-quality students, and, thus, high-quality graduates into the personnel supply. These results have important implications since Public Law 91-230, previously Public Law 85-926, offers those two types of financial aid for the purpose of increasing the quality as well as quantity of new entrants into the supply. Although a number of chairmen at both funded and nonfunded schools mentioned that traineeships helped to recruit better students to their programs, the two groups disagree on the relative effectiveness of financial aid at the undergraduate level. They both agree that graduate fellowships were effective in producing quality students and graduates, with the chairmen at funded schools emphasizing this form of financial aid to a greater extent.

It can be generally concluded that schools funded by Public Law 85-926 prefer to invest funds available for financial aid in the training of graduate students rather than undergraduate students, and that nonfunded schools tend to be less discriminating in the use of available financial aid funds. Possibly this is due to an effort at funded schools to increase the number of graduates in the shortest possible time; a graduate at the master's level can be generated in 1 or 2 years after the student enrolls while a graduate at the bachelor's level takes 3 or 4 years to be generated following initial enrollment. These conclusions are supported by the previously discussed trends in enrollments and degrees conferred.

CHARACTERISTICS OF CURRENT SPECIAL EDUCATION PERSONNEL SUPPLY

The most important characteristic affecting all facets of the current personnel supply and the entrance and attrition from this supply is sex. Over 70 percent of the current supply of special education practitioners are female, down almost 10 percent from a few years ago. Because the proportion of female graduates actually entering the field of special education is significantly less than the corresponding proportion of male graduates, the sex distribution in the training programs has been even more lopsided (about 80 percent female during the 1969-1970 school year).

Current Public Law 85-926 funding strategies have emphasized the importance of increasing the proportion of male practitioners by equalizing the proportions of fellowships and traineeships awarded to males and females. This has had a significant positive effect on the number of male graduates generated during the last few years.⁴ Approximately two-thirds of the responding male students in special education programs receive financial aid. While the average actual increases in undergraduate male and female enrollments have remained proportionately equal to the total male and female enrollments (a ratio of 1 to 4), more equal Public Law 85-926 funding by sex at the graduate level has had the desirable effect of raising the average increase in male enrollments almost equal to that of females.

The study also pointed out the differential impact of funding, such as Public Law 85-926 fellowships, in attracting males and females into special education training. Only 25 percent of the female students responding indicated that the availability of financial aid had a significant impact on their decision to enter the field; conversely, more than 50 percent of the men indicated that this did have a significant impact. Thus, it can be inferred that Public Law 85-926 grants, which represent a significant proportion of the available aid, have helped to effect the increase in the ratio of males to females in the special education personnel supply.

Changing the sex distribution of special education students has had an important impact on the increased numbers of personnel entering the supply. The study revealed that the vast majority of students who dropped out of training, and thus did not enter the current supply of qualified personnel, were females. This is not surprising when the fact that over 80 percent of the responding female students were single (only 60 percent of the male students were single) when they entered special education training is considered in connection with the fact that the most prevalent reason given for dropping out was to get married and start a family.

The sex distribution of the current special education personnel supply has also affected the age distribution of that supply. There are actually three different age distributions that

affect the personnel supply: the present one, the one at the time of the individual's decision to enter the field, and the one at the time of the individual's decision to leave the field. The aforementioned study revealed that the age distributions for males and females in the current supply are significantly different. For males, the distribution is concentrated in the over-35-age levels—perhaps a reflection of the fact that men who remain in the field tend to go into administration and remain there until retirement. On the other hand, the age distribution of females in the supply is skewed at both the low- and high-age levels.

The age distribution of personnel at the time they decided to enter the field of special education is similar for both males and females but they peak at different ages. Almost 60 percent of the females had decided to enter the field by the age of 19, while less than 30 percent of the males had made the decision by the same age. The age distribution of personnel at the time they decided to leave the field of special education is also similar for both males and females but also peak at different ages. About 45 percent of the female attritees had decided by age 25 to leave practice, whereas the male's distribution peaked at slightly over age 30. It is interesting to note that almost half of the female attritees had already decided to leave special education before the majority of male attritees had even entered the field.

Another important facet of the current special education personnel supply population is the existence of a current inactive supply of personnel—the special education attritee population. The importance of this potential supply is that a significant proportion of the attritees reenter the field.

Another potential source of special education personnel supply has been found within the supply of regular education personnel. About 4 percent of the employed regular education personnel have received training in education for the handicapped. This fact correlates with other findings that some of those who leave the field of special education accept regular education jobs (especially those in urban areas who cannot find a job opening in special education) and that about 25 percent of the students who drop out of special education training enter training for regular education. However, be-

cause of the geographical distribution of this potential supply, it may be impractical to consider it as an immediate or even an eventual source of special education personnel supply.

Countering this potential supply in the field is a facet that inflates the current supply in such a way as to produce hidden shortages of qualified special education personnel. A significant proportion of the special education practitioners have never received any training in special education. Additionally, a portion of the current supply is not fully qualified—that consisting of students who dropped out of special education training but who entered special education practice anyway.

The study revealed the following breakdown of the 1969-70 supply that has never received training: about 20 percent of classroom personnel, about 10 percent of teacher-trainer personnel, and almost 30 percent of administrative personnel; almost 20 percent of the female practitioners and over 20 percent of the male practitioners; and about 15 percent of the female attritees and over 20 percent of the male attritees. During the last few years, this hidden shortage has been reduced, as many of these untrained personnel have attended available inservice training programs and received certification.

SPECIAL EDUCATION TRAINING FOR REGULAR CLASSROOM PERSONNEL

In addition, efforts are being made to train regular teaching personnel. With most of the handicapped children receiving education now being taught by teachers in the regular classroom, obviously there is a critical need to train these teachers to recognize the human differences of their students and to provide a suitable learning environment for each.

One priority of the National Center for the Improvement of Educational Systems is to train regular classroom teachers and other educational personnel to develop the attitudes, knowledges, and skills necessary to understand and work with the individual handicapped child.

Budget limitations restrict this special education program to a relatively small number of regular classroom teachers to be trained directly. However, leadership personnel are a

major portion of those receiving training, the concept being that they in turn will train others and assist the teacher-training institutions in modifying undergraduate preparation in the subject matter, skills, and techniques needed to work with children.

Within the 42 Education Professions Development Act (EPDA) projects funded during fiscal year 1971, approximately 5,500 people are receiving training. Such projects may serve as potential models for similar communities, and products developed may be replicated as needed.

Because of the lack of opportunity for the disadvantaged child to develop fully in home, schools, and neighborhoods of low-income areas, a concentrated program effort is being made to prevent learning disabilities in these young children. Through grants to State departments of education and institutions of higher education, emphasis is placed on teacher awareness of handicapping conditions. The program increases the teachers' ability to identify children with learning disabilities, and to diagnose and prescribe suitable ways for alleviating problems. Stress is placed on particular problems of families from rural areas. Some examples of typical projects follow:

1. Ohio's State Department of Education, the grantee for a statewide special education-early childhood combination which includes an Appalachian area of 28 counties, has as one of its major goals to develop demonstration units and design curriculum materials to implement basic concepts related to early childhood education. Two additional objectives which also benefit Appalachia are to disseminate information on a statewide basis relating to preschool education in poverty-depressed rural areas, and to strengthen the program in the kindergarten-primary grades. Programs continue through ongoing inservice education and followup classroom consultation.

During the first year of this project, participants will include 157 teachers and superintendents from all 88 counties of the State together with representatives from teacher-training institutions. During the second year, the number of participants is anticipated to increase to a total of 276, including those who took part during the first year. Educational personnel will consist of 104 teachers, 91 super-

visors, 44 administrators, 8 pupil personnel specialists, and 29 teacher-trainers. Local leadership groups will be trained to develop early intervention strategies for influencing the experiences of young children.

2. The primary goal of the New Jersey special education-early childhood project is to enhance leadership capabilities in southern New Jersey for developing cognitive and affective skills for those persons working with children ages 3 through 9. In addition to working in such areas as migrant and bilingual education, within the public and parochial schools, and the county and State colleges, this project is broadening its approach to include the entire State of New Jersey. Plans call for the establishment of an interagency council to strengthen and unite all institutions working in the early childhood-special education field.

3. At the University of Miami, the EPDA graduate program trains experienced regular classroom teachers in the area of learning disabilities concurrently with experienced special education teachers and students who are already involved in degree or nondegree programs in this area. Not only will the teachers who come from regular classes learn to better understand the needs of children with mild to moderate learning disabilities, but they will become "transition teachers" for children going from self-contained special class situations for learning disability children to the regular classes. Better communications between these teachers will aid in breaking down some of the unfortunate connotations associated with labeling children.

4. In North Carolina, where the legislature is committed to financing public kindergartens, an early childhood-special education training model is being developed by the State Department of Public Instruction and is working in cooperation with the Learning Institute of North Carolina (LINC) teacher-training institutions and the public schools to serve the entire State-community. Now at the end of its first year of operation, 192 educational personnel have been trained, including 156 teachers, 18 administrators, and 18 supervisors.

One year ago these participants were brought together from 18 schools strategically located throughout the State to one training site where they trained at 2- and 4-week sum-

mer institutes followed by 1 week of additional training prior to the opening of school. During the academic year, they received inservice training in the local schools by the EPDA followup coordinator and other consultant personnel. Eighteen Early Childhood model demonstration centers, sponsored by the State Department of Public Instruction in all eight educational districts of North Carolina, provide a practical environment for working with teachers and children within a given locale.

In all of these projects, emphasis is given to priorities which stress the needs of low-income areas. The overall goal of all the projects described above is to bring about institutional changes in the preparation of educational personnel in order to meet the needs and demands of disadvantaged young children, their parents and their communities.

Most projects have an advisory board or steering committee consisting of community representatives, parents, special education experts, and other educational and professional representatives. Persons of the different minority groups are encouraged to participate in whatever area may be of interest to them, whether it be as staff members, advisory board members, participants, parents, or consultants.

DATA AVAILABILITY

The increased size and complexity of special education during the last decade has necessitated the attempted quantification of the available personnel supply for the purposes of planning and evaluation at the Federal, State, local, and university levels. Because of the un-

even geographical distribution of this supply and the resulting nonfunctionality of national estimates, data at the local education agency and university levels must be used to perform the quantification. However, the data available in the fall of 1969 were inconsistent both across and within States. No State had information concerning its potential supply or that portion of the personnel employed who had never received special education training. Thus, although some States had detailed employment data available, a valid and complete quantification of the supply of special education personnel could not be made for any of the States.

FOOTNOTES

1. These are (1) mental retardation, (2) emotional disturbance, (3) crippled, (4) vision, (5) deaf, (6) multihandicapped, (7) speech and hearing, (8) learning disabilities, (9) physical education and recreation, (10) interrelated fields, (11) early childhood education, and (12) special education administration and supervision.
2. Data are from the 1968-69 BEH survey alluded to earlier. The sample respondents included 207 chairmen at universities receiving Public Law 85-926 funds and 63 chairmen at nonfunded universities. Since the characteristics of the respondent and nonrespondent universities were statistically similar, the respondent population was considered a valid sample for the purposes of the impact analysis.
3. From an analysis of Office of Education Project TALENT data, conducted by Operations Research, Inc.
4. Other factors affecting this increase are the increased pay offered to practitioners, the increased public image of a male in the field of special education, and the increased public awareness of youth which has led to increased entrance of males into all social service fields.

CHAPTER 4

Assessment of Future Special Education Personnel Requirements

Special education is undergoing a period of rapid and significant change. Various trends are emerging that promise to lead to profound changes in the way society provides educational services for the handicapped. However, the overall impact that these trends may have on personnel needs is difficult to assess. Some of the trends show promise of decreasing the requirements for highly specialized personnel who work exclusively with handicapped children. Other trends call for an increased number of specialists competent to provide the new or expanding special education programs, responsive to the demands imposed by handicapped children, parents, professional special educators, taxpayers, legislators, and others.

Some of the trends that appear to be imminent are seen by special educators as being highly favorable, with the potential to provide better educational services to more handicapped children. Still other trends are viewed with great concern as representing setbacks to the progress already made.

PROBABLE EFFECTS OF EDUCATIONAL TRENDS

The increased involvement of the Federal Government in the development of special education programs, as evidenced by the creation of the Bureau of Education for the Handicapped and the increased level of funding given that bureau, appear to have paralleled an increased concern and awareness in both the total educational community and the public at large. This heightened interest has resulted in various actions that may influence requirements for

classroom and other special education personnel.

The trend that will probably have the greatest effect on the requirements for special education personnel is the continued emphasis on early identification and placement of children in special education. Improvements in the level and quality of the referral and diagnostic processes will be maintained as regular education personnel become more observant and sophisticated in detecting children who may benefit from some form of specialized education. Parents, through the efforts of parent organizations and public campaigns such as the Closer Look project, are becoming increasingly aware of the services that can be obtained, and are much more apt to seek special services for their handicapped children. Allied professional personnel, such as physical therapists, occupational therapists, school psychologists, social workers, nurses, pupil personnel workers, physicians, and ministers, are increasingly aware of the identification, treatment, and remedial techniques for the handicapped.

Various other factors indicate a probable need for additional special education personnel in the future. Increases in the general population are accompanied by corresponding increases in the number of handicapped children. At the same time, medical science has improved to the point where many children born with genetic defects or physical conditions that are commonly associated with permanent abnormalities are less likely to die in infancy and are more likely to survive beyond school age. As this trend continues, it can be expected that

there will be an increase in the number of seriously handicapped children who will require very specialized attention, both physically and educationally.

Counteracting this last trend, improved medical services and advances in genetic counseling show potential for preventing at least some types of handicaps. There is some reason to believe that the increasing number of therapeutic abortions may eventually reduce the number of children born with severe abnormalities. New vaccines, drugs, and medical procedures hopefully may also combine to eliminate handicaps.

State legislation requiring educational services for the identified handicapped children is now more common. Although relatively rare a few years ago, mandatory legislation covering at least some types of handicapped children has now been passed in more than half of the States. There is evidence that there is a positive correlation between the existence of mandatory legislation and the level of services provided to handicapped children. Since a number of additional States are now in the process of adopting mandatory laws, the services provided, and, thus, the special education personnel required, probably will increase.

Along the same lines, the recent trend toward court decisions mandating a higher level of services for handicapped children can be expected to continue during coming years. The precise effect of these decisions on personnel requirements, though, depends on whether other governmental agencies respond to these decisions by significantly increasing the resources available for educating handicapped children.

In general, increased funds from Federal, State, and local sources have encouraged the establishment and expansion of new special education programs, generating new requirements for trained personnel. Many States have provisions allowing local school districts to assess special millage taxes without tax elections to assist in the support of special education. Such an assessment is being levied with increasing frequency. In addition, almost all States make some provision for reimbursement to local agencies conducting special education programs. Recent years have seen the levels of reimbursement raised and this type of support

extended to a broader range of handicapped children. At the Federal level, new legislation¹ and improved allocation of funds have made it possible to provide the support needed to encourage the development of new programs and the expansion or improvement of some already in existence.

Some of these new programs are being initiated to ameliorate the educational problems of those with potentially severe handicaps and for those with handicaps of low prevalence who were not being served before. Programs to identify these children at the preschool level and to initiate early intervention are increasing in number and show promise of rapid acceleration in the future. A greater sense of public responsibility is being demonstrated for children who have severe handicaps, such as the severely mentally retarded and the multihandicapped: e.g., the deaf-blind and the cerebral palsied-retarded. In some instances, the educational needs of these children create requirements for personnel with training quite different from that of personnel working with children who belong to the handicapped subsets of higher prevalence. Because of the recognition that these handicapped children are equally entitled to the benefits of instruction in physical education, vocational education, and recreation, personnel with training different from that usually supplied will be required to provide quality programs.

There is a definite trend toward the establishment of administrative organizational patterns such as the joint agreement district, the cooperative agreement plan, the accommodating district plan, and the independent intermediate district to provide a broader range of service to a greater number of children. These arrangements make it feasible to initiate programs for children in the low-prevalence handicapped subsets and in rural, sparsely populated areas. They also provide justification for the employment of more and better trained supervisory personnel, as well as those personnel needed for more comprehensive ancillary services.

Professional special educators have become increasingly aware that unless changes are initiated in the manner and approach of providing for the educational needs of handicapped children, it will not be possible to extend

quality services to the 3 or 4 million of these children estimated to be without the attention required for maximum educational benefit. Even with the dramatic expansion of training programs that has taken place since the passage of Public Law 85-926, it does not appear possible to train the personnel needed to serve these children in conventional programs in the foreseeable future.

Consequently, the field is beginning to see certain trends and activities which, either by design or accident, may reduce the requirements for highly specialized personnel training in the future. For the most part, these represent positive, conscientious attempts to provide the best possible educational environment for the handicapped student.

With the improvement in identification and placement procedures, there is a greater likelihood that the child's total environment will be examined. In this way, it is possible to reduce the chances that children demonstrating poor academic performance due to cultural differences will mistakenly be placed in special education classes. Impetus to this movement has been provided by a number of court cases which challenge this kind of placement as a violation of civil and personal rights.

Programs are being developed which will prevent or ameliorate a child's educational deficiencies through early intervention activities. Preschool programs (discussed earlier in this report as generating immediate requirements for new special education personnel) are hopefully viewed as a means by which fewer children will eventually need the special services and educational modifications once they reach the age for regular school enrollment. Thus, many of these children will not generate future requirements for special education personnel at the elementary and secondary levels. Research and demonstration centers have been established which show promise of making inroads in this direction.

From a special education viewpoint, the actions of some teacher unions are working counterproductively to the abovementioned trends. Teacher unions appear to be pressing more frequently for contracts which contain clauses allowing for the removal of children from regular classes if they have physical or mental problems which might add to the teach-

er's workload. Should provisions of this type become widespread, more handicapped children may be forced into special class settings, even though they might best be served in regular classes with supportive help from special education personnel. This would overload the available special education facilities and necessitate the employment of additional special education personnel for newly established segregated classes.

In addition to the continuing trend toward placing handicapped children in as normal an educational program as possible, differentiated staffing patterns for programs are being employed which hold potential for making more effective utilization of the skills of specialists already in the field. The specific types of personnel required to educate a handicapped child will continue to change until educational programs are stabilized for these children.

Increased interest in the training of aides, teacher assistants, and other professional personnel, stimulated by the Career Opportunities Program in the National Center for the Improvement of Educational Systems, provides an avenue whereby master special education teachers can delegate numerous responsibilities for educational programming to these less intensely trained assistants while providing assurance that the quality of education is not diminished. In some instances it actually may be improved. In order to reduce the numbers of special education classroom teachers required by a given number of handicapped children to be served, there has been increased use of paraprofessional personnel.

Although the use of paraprofessionals will reduce the teacher requirements generated by a given number of handicapped children, the rate of growth of the diagnosed handicapped child population will generate an even greater increase in teacher requirements. However, the net effect of the two will be to reduce the special education teacher shortage for those types of teachers required by the education programs utilizing paraprofessionals. The increase in the numbers of paraprofessional personnel required will probably not result in a critical shortage in these occupations. As long as funds are available at the local education agency level to hire paraprofessionals and are available at any level to provide their training, any in-

creased requirements for these personnel will not be difficult to satisfy because of the short training period needed to produce their supply.

Itinerant or resource room teachers, skilled in diagnostic and prescriptive teaching techniques, are able to give immediate intensive instruction to large numbers of handicapped children on a short-term basis and, at the same time, provide consultation to the regular teachers. The latter supports the efforts of the regular education personnel to instruct the child during the remaining time he is in school. One of the characteristics that will be increasingly emphasized in the part-time educational programs is the ability of the special education personnel to work with regular education personnel. In many of the itinerant educational programs, the primary emphasis will change from pupil contact to teacher contact for special education personnel as they are increasingly required to counsel with the regular teacher. This change will also affect the requirements for additional skills in the field of regular education as these personnel, with the assistance of the special education personnel, will be handling an increased number of handicapped children in their regular education classes.

Exciting strides are being made in the development of computer-assisted instruction, and in improved media technology, which can bring excellently designed individualized instruction to the handicapped child without the need for constant supervision by a special educator. Some of this kind of instruction requires a minimum amount of physical output on the part of the child, and may, therefore, be useful even for the more severely handicapped students.

In view of the varied and sometimes conflicting trends noted, it is difficult to summarize the implications in such a way as to develop confidence in any prediction. The trends discussed do not occur in all regions of the Nation. Socioeconomic variables and the prior histories of program development play a role in determining what responses must be made to the problems of special education personnel development. The best estimate of the requirements for special education personnel in the next few years seems to indicate that there will continue to be pressing demands for teachers

and supervisors as well as for the emerging paraprofessional educational roles. These requirements will be confused by the uneven distribution of personnel supply in relation to the locale of the student population awaiting services.

It is also apparent, however, that through the utilization of careful planning, the institution of the most appropriate programmatic and organizational patterns, and the willingness to experiment with methods and approaches which show promise of maximizing the effectiveness of the resources available, a much higher proportion of the children in need of specialized educational intervention can receive such services. This can occur even though the output of qualified teachers appear to fall below current needs.

DETERMINATION OF FUTURE SPECIAL EDUCATION PERSONNEL REQUIREMENTS

The serious lack of information necessary for determining current personnel requirements implies an even greater deficiency of information regarding future requirements.

Because existing methods for estimating special education personnel requirements (based on intuition coupled with reports and unverified incidence figures from each State education agency) are inadequate, it is difficult to determine precisely how and where government agencies should apply their resources to reduce the extent of the personnel shortage. In order to begin to remedy this critical problem, the Bureau of Education for the Handicapped has sponsored the development of operational models to project future personnel needs. The purpose of this effort is to provide State special education agencies with a logical, comprehensive framework for future planning.

The basic factors with which the model deals in deriving projections of personnel requirements include:

- Number of children who are eligible for special education—including enrolled, diagnosed and waiting to be enrolled, and annual additions to the handicapped child population;
- Various educational programs and personnel/pupil contact ratios for each handi-

capped child subset at each education level;

- Number of attritions from the handicapped child population, including dropouts, graduates, returnees to normal education, children who move away, and mortalities;
- Number of children progressing from lower to higher education levels within a handicapped child subset;
- Influence of such factors as medical and diagnostic technology, and modifications in educational policy or practice on the population eligible for special education.

The BEH model seeks to be responsive to variations in the situations that may be encountered by different states in attempting to formulate sophisticated projections of their special education personnel needs. Typical of these variations are the differences in the definitions of various handicapped subsets from State to State, the differences in educational practices regarding both environment and personnel utilization, and the disagreement in the quantitative assessment of the factors which will affect the trends in special education.

Such a model will offer the advantage of explicitly revealing, in a quantitative fashion, the assumptions that the user makes regarding special education variables. Further, alternate values may be inserted in the model, and alternative estimations of requirements may then be compared for planning purposes. This model capability is of value especially when special education administrators are weighing several potential plans and/or policies aimed at better utilization of the existing personnel employed, thus reducing future special education personnel requirements. Generating a set of estimates of future requirements will enable the administrators to evaluate the quantitative effects of these plans/policies and will assist them in the assignment of implementation priorities to the selected plans/policies.

FUTURE DATA AVAILABILITY

Few States have special education information systems capable of providing management type information, that is, data that have predictive as well as evaluative applicability. There is a great need for additional data at

the Federal and State education agency levels, not only to document services provided but to be used by special education administrators in sophisticated planning and evaluation techniques. These administrators are being pressed from all directions (the U.S. Congress, State legislatures, parents, and special-interest groups) to provide the highest quality special education programs and to justify them financially as well as educationally. To accomplish this, the special education administrators at all levels must have sufficient data to analyze programs status and effectiveness and to provide a base for planning, especially in the area of future requirements and available supply of special education personnel. A major upgrading of the information flows within almost all states is needed. To accomplish this objective, changes will have to be made by the States—major in some and relatively minor in others.

The first step in upgrading the information available to special education administrators is to provide the agencies with an understanding of what types of information can be made available, how to obtain it, and how to use it.

Another major requirement for the improvement of information flow and data reliability is acceptance by special education agencies, both at State and local levels, of the fact that each data source and each data element are integral parts of the overall system. Increased data availability need not always require increased work in data collection. Frequently, coordinated and systematic data collection will require no increase in effort while yielding much additional information.

In very few of the States are the data pertaining to handicapped children inclusive of all of the sources of handicapped child education—public schools, State schools and institutions, and private facilities. Usually, each agency maintains its own records. While it is possible for a State special education unit to develop an information system that will contain the data pertinent to the areas of its own responsibility, this does not necessarily result in a total handicapped-child data base. Such limited information would defeat the objective of projecting special education personnel requirements for the State's *total* handicapped child population. It must be stressed that inter-agency cooperation and communication are

absolutely essential to the establishment of a common handicapped-child data base that will be representative of the State's total service requirements and responsive to each agency's information needs. Further, in some States the special education agency's internal coordination and communication must be strengthened. Standardization of forms, data elements, data-collection cycles, and time-tables are all prerequisites to internal data-flow stabilization.

Liaison between State-level and local-level special education personnel is also essential to the establishment of an information flow. In most States where State special education agency activity is confined to financial disbursements or where there is very little professional involvement, the information flow is minimal and often inadequate. Conversely, the greater the involvement of the State agency with the local agency, the better the information flow is likely to be. A corollary benefit to greater involvement is the improved capability of State personnel to analyze and utilize the information collected; e.g., in the quantification of special education personnel requirements.

Resource availability—i.e., the personnel and computer hardware at the State level—was indicated to be a problem in improving the availability of information. Personnel resources, both in terms of quantity and training, often are the major problem. The "people" orientation of special educators directs them first toward service to people and the resolution of education problems. In addition, special education administrators not trained in information processing have no great incentive to resolve the problems inherent in this "foreign" field. In a tight staffing situation, which is characteristic of State special education agencies, nonpeople-oriented efforts have difficulty in obtaining the required attention. The fact remains, though, that additional or organized information need not necessarily increase their staff requirements and that, in some cases, data availability could mean that more staff time would be made available for other educationally oriented efforts. While some degree of information system technical capability would be desirable within the special education agency, it has been found that this capability was fre-

quently available in other State agencies and could be used on an "as required" basis by the special education agency.

Although computer availability is a problem in many States, the relatively limited application of automated data processing (ADP) techniques to the special education information systems is more the result of a combination of other constraints. The lack of appreciation for the potential availability of additional information through the application of ADP and a limited understanding of how to initiate and apply ADP techniques are important obstacles to automating special education data processing. In many instances, the special education agencies were either unaware of the capability available to them, or did not know the procedure for obtaining the technical assistance necessary for the application of computer techniques to the special education data.

The requirement to respond to Federal requests for information has been a prime motivator in the development of the existing special education information and further advancement in the quality and quantity of information will require continued Federal influence. Many State agencies need encouragement in the form of incentive and leadership. The impetus that has been gained as a result of past efforts should be supplemented and supported by continued Federal sponsorship of programs to assist the States with the development of their information systems.

When the data availability is sufficient to allow most States to predict future special education personnel requirements, State- and Federal-level administrators will be better able to formulate policy and practices to generate a supply of personnel with the geographical and occupational characteristics to satisfy these requirements.

FOOTNOTE

1. The applicable legislation includes Public Law 89-313, titles I, III, and VI of the Elementary and Secondary Education Act, the Vocational Education Amendments of 1968, and the Family Assistance Act.

Assessment of Future Special Education Personnel Supply

Any attempt to determine the nature and estimate the extent of the future special education personnel supply or to formulate plans and policies to influence that supply must be based on the two major factors which define the personnel supply population—the identification and description of the training programs that generate the supply, and the identification and description of the personal and professional characteristics of the supply. A third factor, the format of the special education services and instruction, is influenced by the aforementioned factors and by the existing available personnel supply.

The role of the State education agency in the personnel supply effort is evolving from one of dispensing funds and supervising their use to one of program coordination and consultation. This State agency, as the legally responsible agent for public educational programs in most States, is in a unique position to plan and initiate training efforts. In recent years, Federal personnel from the Division of Training Programs in BEH have worked closely with special education administrators at the State education agencies to develop a strong planning capability, both within the agencies and between the agencies and institutions of higher education. Regional and national workshops on planning have been conducted and additional planning and technical assistance activities are being considered.

These agencies and institutions are currently being offered the opportunity of joint participation in program assistance grant-supported training programs. Essentially, program assistance grants reduce the number of precondi-

tions placed on the use of funds, thus allowing the special education administrators greater flexibility in developing training programs. The goal of program assistance grant activities is to maintain or increase the number of special education personnel trained while improving their measured quality, with approximately the same investment of Federal funds.

The State education agencies are also being encouraged to cooperate with institutions of higher education in the planning and conduct of special projects designed to develop new models of special education training programs. The special education administrators from those agencies and institutions coordinate their efforts to identify possible new staffing patterns for these programs and to prepare the leadership personnel needed to organize and teach in the programs.

The special education administrative personnel in a State education agency are often in a position to coordinate Federal and local efforts in personnel preparation in such a way that Federal funds act as a catalyst in producing a significant multiplier effect on the number of special education personnel trained. Because this transition in the role of these administrators from supervision to consultation may require some retraining and skill updating and upgrading, BEH is supporting efforts to provide them with inservice training. Summer workshops utilizing simulation techniques for planning and evaluation are being conducted for State special education administrators; regional conferences and technical assistance activities will continue and will increase in the future.

PROBABLE EFFECT OF FUNDING ON INSTITUTIONAL TRAINING PROGRAMS

The personnel training program in the area of special education is currently at a cross-roads. The original rationale for developing a highly qualified corps of leadership personnel who in turn could prepare teachers of the handicapped, has proved and is proving successful. A little over a decade ago there were approximately 70 colleges and universities specifically training personnel for the education of the handicapped. Today, there are over 400, of which over 300 are receiving Federal support through BEH. The vast majority of the professional cadre in these schools were trained as a result of earlier legislation (Public Law 85-926).

In spite of this growth, a great national shortage in the number of direct service personnel trained to educate exceptional children remains. This national shortage is not evenly distributed. There are still many geographic areas in which it is not possible for a teacher of the handicapped to obtain a job because no job exists, while in many other geographic areas it is impossible to obtain a teacher for a position in the area of the handicapped. One of the reasons for this would appear to be that in both urban centers and in sparsely populated areas the educational institutions are slow in initiating programs that respond to local needs. There is a specially urgent need to recruit special education personnel from minority groups; the need for bilingual personnel is particularly acute.

Additionally, there is the constant problem of upgrading the quality of the service that is provided to exceptional children. The latter situation is frequently aggravated when, due to a shortage of trained specialists, minimally trained or even untrained personnel are charged with the responsibility of educating these children.

With limited resources and such a great need, it is anticipated that there will be some modifications in the current Federal funding patterns supporting the training of special education personnel. These changes will probably take the form of greater emphasis on the output of high-quality trained personnel with defined competencies and less emphasis on pro-

gram input. In order to be as effective and efficient as possible, the colleges will be increasingly encouraged to participate with the State education agencies in a coordinated response to State special education personnel requirements. To the extent that personnel of a given type might be required, the institution should be able to adjust its plans to fill this particular need. The responsibility of colleges and universities for preparing the personnel required to provide the quality and degree of service needed by all handicapped children in all geographic areas is being stressed increasingly.

These changes will require a better evaluation of the efforts at all levels and will require more comprehensive personnel planning by State and regional education agencies aided by BEH. Institutions of higher education will be encouraged to experiment with improved ways of producing more and better personnel as well as new ways of producing new types of personnel, and they will be required to evaluate these efforts. A great deal of work needs to be done among schools in underdeveloped areas and among the traditionally black schools. In addition, the training of teachers of preschool handicapped children and vocational teachers of the handicapped have become priority areas.

To encourage these changes, BEH will move from the year-to-year full application for funding procedure currently practiced to a full application required only every 3 years. Since BEH does not know what its budgets will be from year to year, the money allocations cannot be made for the total 3-year period. However, the expectation of essentially level funding over that period of time will be established. This should enable training institutions to address special education personnel training concerns more confidently and with better planning.

PROBABLE IMPACT OF STRATEGIES AFFECTING TRAINING ALTERNATIVES

Because of the length of training time needed to generate a graduate in the field of special education, funding and support strategies directed toward training programs have a relatively long-term effect on the types and numbers of new graduates, a significant proportion of the special education supply entrants. Thus,

current strategies will continue to influence the future increases in the number of new graduates and their occupational distribution for several years.

The strategies of the selective funding of specific training program areas have important impacts on the number of each type of special education personnel that will graduate into the supply. Funding of a program area (e.g., with Public Law 85-926 funds) will increase the supply of personnel in that area and will maintain an increased number of graduates entering the supply annually. Because of the timelag needed to produce the supply of special education personnel,¹ the current strategy of emphasizing the areas of emotionally disturbed and special learning disabilities will reduce the future personnel shortage in these areas.

Since, as discussed in chapter 2, the dropout rate of part-time students is much higher than that of full-time students, the selective funding strategy should be combined with a strategy that would not encourage part-time study in special education for preservice students. In addition, the trend toward equalizing the sex distribution of the personnel supply by increased recruiting of males, who have a lower dropout rate than females, when combined with selective funding, will have a significant effect on the increased supply of special education personnel in the program areas emphasized. Future recruitment strategies will be developed to try to make the racial distribution of the personnel supply similar to that of the total population.

Within many program areas, future funding and support strategies will be formulated to give direction to the choice of alternatives between generalized and specialized training of a specific personnel type. There is a growing trend toward emphasizing teacher competencies as training centers try to find commonalities in instructional methodologies. Many of the university training programs have been moving toward a noncategorical approach in significant portions of special education training. Performance criteria are slowly replacing credit counts as the important indicator of readiness to teach.

As the teaching methods and associated technology of each of the programs offered to a handicapped child subset become more unique

to that program, specialized personnel will be needed. If these personnel are not available in the existing supply, either a portion of that supply must go through an intensive period of specialized training prior to employment in that educational program or the quality of the education offered must be lowered temporarily as the needed personnel are given on-the-job training. Special education administrators must consider these factors during the development of alternative training strategies.

STRATEGIES INVOLVING REGULAR EDUCATION PERSONNEL

To the maximum extent possible special educators seek to help develop the attitudes and skills necessary to accommodate the unusual needs of pupils within the regular classroom. When it is not possible to achieve the necessary climate and specialization of instruction in regular classrooms as taught by regular teachers, other special arrangements must be made. It is desirable, however, that every special educator sees himself as a resource for his entire school and not simply as a teacher of a small group of children banded together on the basis of some medical or behavioral attribute.

In this framework, one can think of special education as an aggregate term covering all specialized forms of instruction that ordinarily cannot be offered by unassisted classroom teachers. While regular teachers are able to teach most content or skills to most children assigned to their classes, they clearly are not equipped to teach braille reading methods to blind children or lipreading to deaf children. Special educators with knowledge of specialized types of instruction or techniques of instruction can help create this additional resourcefulness in regular teachers and can provide adjunct service to the work of the regular teacher. Beyond that, however, regular teachers have a continuing need for growth in professional knowledge and skills. The major part of this growth will have to come through inservice training.

Because of the tremendous range of techniques, curriculums, and materials now in existence and likely to emerge in the future, educational personnel can be equipped to handle only limited parts of them. Even with an intro-

ductory knowledge in many special education areas, regular education and special education personnel cannot be expected to maintain technical competence in such diverse areas as auditory training, methods and materials for the mildly mentally retarded, and resources available for visually impaired children. Continuing education programs offered at all levels of the educational system will have to carry the major role of maintaining technical knowledge and skills as well as development of new knowledge and skills on the part of all educational personnel.

Increasingly, the current attitude about best instruction for handicapped children is that as much education as possible should be conducted in normal settings. For a variety of professional and cultural reasons, it seems highly appropriate for special education to assist the mainstream educational system to accept much of the responsibility for the fundamental education of handicapped children, particularly those children with mild handicaps who do not require highly specialized techniques, material, or equipment. Through special summer institutes, workshops, and inservice training programs, the attitudes, knowledge, and skills of regular teachers can be broadened considerably to allow them to more readily accommodate handicapped children in their classrooms providing that an appropriate support system is established. In conjunction with such inservice training programs, administrative and staffing arrangements must be made which will allow teachers the time and energy to respond to the individual differences that will be found in a classroom of 30 children when the whole range of children is placed there. For this kind of provision to become operational in local schools, it will also be necessary for school administrators, and even school board members, to attend inservice programs as well.

The trend toward integrating handicapped children into the regular classroom as much as possible has necessitated the development of strategies to increase the number of regular education personnel trained to work effectively with these children. Most of these strategies were developed in connection with Public Law 90-35, the Education Professions Development Act. These strategies will emphasize the training of the trainers of elementary and early

childhood teachers and the subsequent modification of the training curriculums to include this very abbreviated special education training. One of the side effects of these strategies will be an increased capability of regular education personnel to identify and refer for diagnosis children who are potentially eligible for special education services. To accomplish the objectives of Public Law 90-35, the funding and support strategies will be directed toward:

- a. Programs to train university and other personnel who will train regular educators and other related personnel;
- b. Programs to train university and local education administrators;
- c. Programs to train and retrain regular education classroom personnel;
- d. Programs to train support personnel,—e.g., school psychologists, counselors, and social workers;
- e. Programs to train paraprofessional personnel to assist either regular or special education personnel; and
- f. Programs to train educational teams, composed of all of the aforementioned personnel.

In the future, these trained regular educators could be considered as an auxiliary supply of special education personnel.

PROBABLE IMPACT OF STRATEGIES AFFECTING CHARACTERISTICS OF SUPPLY

Strategies formulated to fund and support individual students, to improve training programs and working conditions in special education, and to develop improved recruitment methods will have a long-term influence on the characteristics of the future special education personnel supply. These strategies will affect the extent of the supply both directly and indirectly. All will tend to attract more special education students, thus directly influencing the potential size and quality of the "new graduates" and "retrained regular education teachers" components of entrance. As was discussed previously the availability of financial aid attracts greater numbers of students directly and indirectly through the multiplier effect. By definition improved recruitment methods will increase the special education student enroll-

ment, since that is one of the major objectives of any new method.

These strategies also can and should be used to effect changes in the motivational characteristics of the special education personnel supply. To accomplish this, the first and third categories of strategies can be used to influence these characteristics in the abovementioned components of entrance. The value of these strategies is based on the fact that the specification of the characteristics of training programs combined with the description of the personal characteristics of the enrolled population enables administrators to describe and estimate accurately the special education personnel who will enter the supply for the first time within the following year or two. Thus, changing the motivational characteristics of the student population produces changes in the rate of dropout from that population, changes in these characteristics of the existing supply over time, and subsequent changes in the rate of attrition from the supply.

In order to formulate these strategies to affect motivation characteristics, administrators must have knowledge of the existing motivations and their effects on the career choices of the personnel. There are definitely several factors which are key features in attracting people to the field of special education. It appears that about the same factors attract both people who will remain in the field and those who will drop out. The difference is that the magnitude of the motivation to enter training is higher for those who remain. In addition, people who later drop out of either training or practice show that they had many misconceptions about the field. Their motivation decreases drastically across the board soon after getting a taste of reality in study or practice. In general, those who remained in the field have increases and decreases in satisfaction for different aspects or factors, but an overall increase in the satisfaction they obtain from their jobs.

It appears that the more abstract attractions (i.e., the intrinsic characteristics of the field), such as the relevancy of teaching the handicapped to personal values and to society, combined with the delight one gets from working with handicapped children, are the most important factors in attracting people to the field.

However, it also appears that many people who would like to satisfy the benevolent self-image of "teacher-healer" are not willing to suffer the long training period and the often difficult course work. (It should be noted that this is particularly true in speech and hearing where, commonly, a master's degree is required to attain professional status.) As they train, their shining, unrealistic image of a career in special education begins to tarnish. They become aware that their peers do not look up to them quite as much as expected, so they drop out of training. The dropouts probably will often switch into regular education and do quite nicely, as the public image of the regular education teacher is fairly accurate and well established.

However, the public image of the special educator is a different matter. Very little publicity is given to widespread difficult working conditions, both physical and administrative. The image is vague, somewhat glamorous, and, above all, unrealistic.

The rate of attrition from the field of special education can be reduced by emphasizing a public image which is truthful about conditions, pay, and so forth. This will serve to discourage people who are not equipped to endure the conditions prerequisite to the rewards. Very often students will stay on through training, hoping that practice will be more rewarding. Nevertheless, once in practice, the low salary, poor working conditions, and lack of prestige are enough to overcome all love of working with children, and they become attritees. A recruiting strategy based on a more realistic image will also help attract more students to education for the handicapped who will not tend to become disillusioned and drop out of training.

On the brighter side, the majority of the people attracted to education for the handicapped have a fairly realistic image of the field when they enter. Those who remain seem to find more and more satisfaction from their work despite what is to others low pay, poor working conditions, and little prestige. Their satisfaction in contributing to society and especially to children makes most of these drawbacks less important to them.

A further look at the attitudes of dropouts from special education training programs indi-

cates that the two school-related factors that contribute most to the decision to drop out were the length of training needed for professional status and the unavailability of financial aid. The data showed that students who remain in training find that the availability of financial aid becomes increasingly important over time in their decision to remain. These factors, coupled with the development of a more realistic view of the actual working conditions that they will encounter, were the major causes of the student attrition in the study sample. However, it should be pointed out that these selection factors tend to weed out not only the students having a low probability of success in practice, but also those students who could not afford the cost of training without aid.

Strategies related to the development of recruitment methods should be given top priority because they will have the most profound impact on the nature and extent of the largest source of potential supply, the special education student population. These recruitment methods should put emphasis on the factors that are intrinsic to special education; for example:

- a. The dedication needed to work with handicapped children;
- b. The long working hours required;
- c. The difficult working conditions and relatively low pay;
- d. The needs of the children and the progress that can result from education;
- e. The social relevancy of this kind of work; and
- f. The availability of financial aid.

The factors that are extrinsic to special education that should be deemphasized are:

- a. The long vacations;
- b. The short workdays;
- c. Job advancement;
- d. The availability of jobs;
- e. The opportunities for success in the field; and
- f. The rate of advancement.

A recruiting campaign based on this type of approach will appeal more to a person's in-

trinsic motivations and will therefore attract students to special education training who have a high probability of success in practice.

To ensure that the students attracted to the field are indeed intrinsically motivated, screening techniques can and should be used as part of each recruitment method. Used properly, a screening device may cut the voluntary dropout rate to as low as 5 percent of the total enrollment in any training program.

The initial impact of these strategies is likely to be a decrease in the numbers of newly enrolled students because of the increased selectivity of personnel. However, as the public image of special education becomes more realistic, this number will increase yearly at or above the current rate of increase. Even if there is an initial drop in the number of newly enrolled special education students, there may not be a subsequent drop in the number of graduates entering practice because the proportion of students dropping out will decrease and that of graduates entering practice will increase.

FUTURE PERSONNEL AVAILABILITY

Although a supply of qualified special education personnel exists, the availability is affected by several considerations, not the least of which is money. One State may have little difficulty in obtaining qualified personnel because of a good pay scale, while a neighboring State offering lower pay may have many unfilled positions. An understaffed State may have good university training programs but lose its potential personnel because of salary limitations. The wide variation in teacher-training requirements and certification is another factor affecting personnel acquisition. Other factors such as the special education "atmosphere" in a State or locality, and the previously mentioned geographic dispersion problem have an influence upon special education personnel availability.

This problem of availability will necessitate the development of future strategies aimed at getting special education personnel, especially those in an occupational or geographical area having oversupplies of personnel, to move to

the areas generating unfulfilled requirements. A high priority is currently being given to the development of this important set of strategies in the hopes that the special education personnel shortage can be reduced by rearranging the distribution of personnel as well as by adding

new entrants to the supply.

FOOTNOTE

1. To produce master's level graduates, 1 to 2 years are needed, and 3 to 4 years are needed to produce bachelor's level graduates.

APPENDIX A

Handicapping Conditions: Educational Groupings and Definitions

The following definitions refer only to children who are sufficiently impaired to be included in the handicapped population and, by definition, require special educational services.

This first list is a proposed taxonomy developed in 1968 by a group of consultants working with the Bureau of Education for the Handicapped, U.S. Office of Education.

Blind ----- Children with vision so defective that sight cannot be used as a primary avenue of learning and print cannot be used as the primary mode of reading. Excluded from this group are legally blind children who are able to read large type.

Partially sighted ----- Children with limited but sufficient residual vision that sight can be used as a primary avenue of learning and print can be used as the primary mode of reading with the aid of special facilities, materials, and/or media. Included are legally blind children who are able to read large type.

Deaf ----- Children whose sense of hearing, either with or without a hearing aid, is not sufficient to interpret language.

Hard-of-hearing ----- Children whose loss of hearing is educationally significant, but whose residual hearing is sufficient to interpret language with or without a hearing aid.

Emotionally disturbed ----- Children whose severe and frequent maladaptive behavior seriously reduces their attention level and learning. For educa-

tional purposes, these children are grouped according to the following degrees of severity and/or frequency of maladaptive behavior—mild, moderate, and severe.

Mentally retarded ----- Children whose inherent capacity to learn (cognitive limits) is so limited that they cannot meet the educational demands of the regular classroom. For educational purposes, mentally retarded children are grouped as follows:

- Mildly retarded children who can acquire practical skills and functional reading and arithmetic abilities to a third- to sixth-grade level with special education and can be guided toward social conformity.
- Moderately retarded children who can learn simple communication, elementary health and safety habits, and simple manual skills, but do not progress in functional reading or arithmetic.
- Severely retarded children who can profit from systematic habit training.
- Profoundly retarded children who may respond to skill training in use of legs, hands, and jaws.

Speech disorders ----- Children whose speech deviates from the average to the extent that they draw unfavorable attention to themselves, whether through unpleasant sound, inappropriateness for age level, or lack of intelligibility.

Nonsensory physical disabilities ----- Children with neuromuscular disabilities resulting from brain damage, characterized by disturbances of the voluntary motor functions which particularly affect the extremities, and children whose weakened physical condition reduces their activity and efficiency in schoolwork or requires special health precautions in school.

Special learning disabilities ----- A severe disorder in one or more of the processes involved in understanding or in using spoken or written language. These include conditions which have been referred to as perceptual handicaps, brain injury, minimal brain dysfunction, and dyslexia. These do not include learning problems which are primarily due to visual, hearing, motor handicaps, mental retardation, emotional disturbance, or environmental disadvantage.

This second list is a proposed taxonomy advocated by some current special education administrative planners.

<i>Educational Programing Dimensions</i>	
<i>Handicapped Subset</i>	
Physically handicapped -----	Classrooms may require special equipment, but normal educational functioning/learning is not affected.
Intellectually handicapped -----	Content and method of instruction differs to varying degrees from normal educational programming.
Emotionally handicapped -----	Depends upon extent of behavioral deviation from normal; special equipment and content and method of instruction will vary from that of normal educational programming.
Speech handicapped -----	Amount and kind of specialized instruction needed depends on the extent of the communicative disorder.

APPENDIX B

Geographical Locations of Schools Producing a Supply of Special Education Personnel in 1970-71, Compared to the Distribution of Level of Services for Exceptional Children During 1967-68

As discussed in the text of this report, the distribution of the special education personnel supply producing centers and that of the personnel requirements are not significantly different. A State-by-State list of the institutions of higher education that had a program to train special education personnel in 1970-71 is presented in table B.1. The list is divided into schools that received Public Law 85-926 funds

and those that did not. It is interesting to note that almost all of the major programs (in terms of size) are at funded schools. Figure B.1. illustrates the geographical distribution of the amount of services provided to exceptional children during 1967-68. The data used in this figure were based on the percent of all public school children who were enrolled in special education programs.

Table B.1—LIST OF SCHOOLS THAT HAD A PROGRAM OF SPECIAL EDUCATION DURING 1970-71, BY STATE

Received Public Law 85-926 Funds	Did Not Receive Public Law 85-926 Funds†
Alabama Alabama A&M University Auburn University* University of Alabama* University of South Alabama	Alabama Alabama College* Troy State University Tuskegee Institute
Arizona Arizona State University Northern Arizona University University of Arizona*	
Arkansas Arkansas State University State College of Arkansas University of Arkansas*	Arkansas Harding College—Main Campus Ouachita Baptist University Philander Smith College
California California State College at Fullerton California State College at Long Beach* California State College at Los Angeles* Fresno State College Sacramento State College San Diego State College* San Fernando Valley State College* San Francisco State College* San Jose State College*	California Chapman College Chico State College* College of the Holy Names Pepperdine College Stanford University* Stanislaus State College University of California at Riverside University of the Redlands* U.S. Int'l University Western (Campus)

*Schools with speech and hearing in a department separate from special education.

†Many of these schools have never applied for Public Law 85-926 funds.

TABLE B.1 (Cont.)

Received Public Law 85-926 Funds	Did Not Receive Public Law 85-926 Funds†
Sonoma State College University of California at Berkeley University of California at Los Angeles University of the Pacific* University of San Diego, College for Women University of Southern California	Whittier College*
Colorado Colorado State University Loretto Heights College University of Colorado* University of Denver* University of Northern Colorado	Colorado Adams State College Western State College of Colorado
Connecticut Central Connecticut State College Eugene O'Neill Memorial Theatre Center St. Joseph College Southern Connecticut State College University of Connecticut	Connecticut Fairfield University University of Hartford
Delaware University of Delaware	
District of Columbia Federal City College Gallaudet College The George Washington University*	District of Columbia American University The Catholic University of America District of Columbia Teachers College Howard University
Florida Florida Atlantic University The Florida State University* University of Florida University of Miami University of South Florida*	Florida Barry College Florida A&M University
Georgia Atlanta University Augusta College Emory University Georgia Southern University Georgia State University University of Georgia* Valdosta College West Georgia College	
Hawaii University of Hawaii*	
Idaho Idaho State University* University of Idaho	
Illinois Bradley University Chicago State College Eastern Illinois University Illinois State University* Northern Illinois University Northwestern University* Southern Illinois University University of Illinois*	Illinois College of St. Francis Elmhurst College Mundelein College Northeastern Illinois State College St. Xavier College Western Illinois University

*Schools with speech and hearing in a department separate from special education.

†Many of these schools have never applied for Public Law 85-926 funds.

TABLE B.1 (Cont.)

Received Public Law 85-926 Funds	Did Not Receive Public Law 85-926 Funds†
Indiana Ball State University* Indiana State University* Indiana University* Purdue University	Indiana Butler University St. Francis College St. Mary's College
Iowa Drake University University of Iowa* University of Northern Iowa	Iowa Briar Cliff College Grinnell College Marycrest College
Kansas Fort Hays Kansas State College Kansas State Teachers College Kansas State University University of Kansas* University of Kansas Medical Center Wichita State University	Kansas Kansas State College at Pittsburg
Kentucky Ballarmine-Ursuline College Brescia College Eastern Kentucky College Murray State University University of Kentucky* University of Louisville	Kentucky Morehead State University Nazareth College of Kentucky Pikeville College Western Kentucky University
Louisiana Grambling College Louisiana State University and A&M College* Louisiana State University at New Orleans Louisiana Tech University Northwestern State College Southeastern Louisiana College Southern University and A&M College	Louisiana Francis T. Nichols State College McNeese State College Northeast Louisiana State College St. Mary's Dominican College Tulane University
Maine University of Maine at Farmington University of Maine at Orono	
Maryland Coppin State College University of Maryland* Western Maryland College	Maryland Johns Hopkins University* Loyola College* Mount St. Agnes College* Towson State College
Massachusetts Boston College Boston University* Emerson College Fitchburg State College Northeastern University* Smith College University of Massachusetts Westfield State College	Massachusetts Assumption College Lesley College State College at Bridgewater Tufts University
Michigan Central Michigan University* Eastern Michigan University* Michigan State University Northern Michigan University* University of Michigan* Wayne State University* Western Michigan University*	Michigan Flint College Grand Valley State College Marygrove College

*Schools with speech and hearing in a department separate from special education.

†Many of these schools have never applied for Public Law 85-926 funds.

TABLE B.1 (Cont.)

Received Public Law 85-926 Funds	Did Not Receive Public Law 85-926 Funds†
Minnesota Mankato State College Moorhead State College St. Cloud State College* University of Minnesota* University of Minnesota at Duluth	Minnesota Bemidji State College
Mississippi Jackson State College Mississippi State University University of Southern Mississippi	Mississippi Mississippi State College for Women
Missouri Central Missouri State College Fontbonne College Northeast Missouri State College* Saint Louis University* University of Missouri* University of Missouri at St. Louis Washington University	Missouri Avila College Harris Teachers College Northwest Missouri State College Southeast Missouri State College Southwest Missouri State College University of Missouri at Kansas City William Jewell College
Montana Eastern Montana College University of Montana	
Nebraska University of Nebraska at Lincoln* University of Nebraska at Omaha	Nebraska Kearny State College
Nevada University of Nevada at Las Vegas University of Nevada at Reno	
New Hampshire Keene State College	New Hampshire University of New Hampshire
New Jersey Glassboro State College Jersey City State College Montclair State College Newark State College* Patterson State College Rutgers University Trenton State College	New Jersey Douglass College of Rutgers* Seton Hall University
New Mexico Eastern New Mexico University New Mexico State University University of New Mexico*	New Mexico New Mexico Highlands University
New York Canisius College City University of New York* College of St. Rose D'Youville College Fordham University Herbert H. Lehman College, CUNY Hofstra University* Hunter College, CUNY New York University* Queens College, CUNY State University College at Brockport SUNY/Albany* SUNY/Buffalo	New York Adelphi University* Bank Street College of Education Brooklyn College* C. W. Post College of Long Island University Elmira College Ithaca College Mercy College Mt. St. Mary College Nazareth College of Rochester Pace College Russell Sage College St. John's University SUNY State College at Albany*

*Schools with speech and hearing in a department separate from special education.

†Many of these schools have never applied for Public Law 85-926 funds.

TABLE B.1 (Cont.)

Received Public Law 85-926 Funds	Did Not Receive Public Law 85-926 Funds†
SUNY State College at Buffalo* SUNY State College at Geneseo Teachers College, Columbia University* Syracuse University* Yeshiva University	SUNY State College at Fredonia
North Carolina Appalachian State University East Carolina University Lenoir-Rhyne College North Carolina Central University University of North Carolina at Chapel Hill University of North Carolina at Greensboro Western Carolina University	North Carolina Bennett College Duke University Greensboro College
North Dakota Minot State College* University of North Dakota	North Dakota North Dakota State University
Ohio Bowling Green State University* Cleveland State University Kent State University* Ohio State University Ohio University* University of Akron* University of Cincinnati*	Ohio Ashland College Case Western Reserve University* Central State University Heidelberg College Lake Erie College Miami University* Notre Dame College Oberlin College University of Dayton University of Toledo Wittenberg University Wright State University Youngstown University
Oklahoma Central State College Oklahoma State University Phillips University University of Oklahoma University of Oklahoma Medical Center University of Tulsa	Oklahoma Northeastern State College Northwestern State College Oklahoma College of Liberal Arts
Oregon Lewis and Clark College Oregon College of Education Portland State University University of Oregon*	Oregon Eastern Oregon College Oregon State University Pacific University Portland State College*
Pennsylvania Bloomsburg State College* California State College* Clarion State College Duquesne University Edinboro State College	Pennsylvania Cheyney State College College Misericordia Kutztown State College Mount Mercy College West Chester State College
Indiana University of Pennsylvania Lock Haven State College Mansfield State College Millersville State College Pennsylvania State University* Slippery Rock State College Temple University* University of Pittsburgh	

*Schools with speech and hearing in a department separate from special education.

†Many of these schools have never applied for Public Law 85-926 funds.

TABLE B.1 (Cont.)

Received Public Law 85-926 Funds	Did Not Receive Public Law 85-926 Funds†
Rhode Island Rhode Island College	Rhode Island Salve Regina College University of Rhode Island
South Carolina Columbia College South Carolina State College University of South Carolina	South Carolina Converse College Winthrop College
South Dakota Augustana College Black Hills State College University of South Dakota	South Dakota South Dakota State University
Tennessee George Peabody College for Teachers Memphis State University University of Tennessee* Vanderbilt University	Tennessee East Tennessee State University Middle Tennessee State University Tennessee Agricultural and Industrial State University
Texas Baylor University East Texas State University Incarnate Word College Lamar State College of Technology* Midwestern University North Texas State University Our Lady of the Lake College Southern Methodist University South Texas State University Texas Christian University Texas Technological College* Texas Woman's University Trinity University University of Houston* University of Texas at Austin*	Texas Abilene Christian College Angelo State College Pan American College Prairie View A&M College Sacred Heart Dominican College Sam Houston State College* Stephen F. Austin State College* Texas Arts and Industries University University of Texas at El Paso West Texas State University
Utah Brigham Young University* University of Utah* Utah State University*	Utah College of Southern Utah Weber State College
Vermont University of Vermont	Vermont College of St. Joseph the Provider Trinity College
Virginia College of William and Mary Madison College Norfolk State College Old Dominion College Radford College University of Virginia* Virginia Commonwealth University Virginia State College	Virginia Hampton Institute
Washington Central Washington State College* Eastern Washington State College University of Washington* Washington State University Western Washington State College	Washington Fort Wright College of the Holy Names Gonzaga University University of Puget Sound Walla Walla College
West Virginia Marshall University*	West Virginia Glenville State College

*Schools with speech and hearing in a department separate from special education.

†Many of these schools have never applied for Public Law 85-926 funds.

TABLE B.1 (Cont.)

Received Public Law 85-926 Funds	Did Not Receive Public Law 85-926 Funds†
West Virginia University at Morgantown*	Morris Harvey College
West Virginia University at Nitro	West Liberty State College
Wisconsin	Wisconsin
Marquette University	The Cardinal Stritch College
University of Wisconsin at Madison*	Carthage College
University of Wisconsin at Milwaukee*	Wisconsin State University at River Falls
Wisconsin State University at Eau Claire*	
Wisconsin State University at La Crosse	
Wisconsin State University at Oshkosh	
Wisconsin State University at Stevens Point	
Wisconsin State University at Whitewater	
Wyoming	
University of Wyoming*	
	Guam
	College of Guam
Puerto Rico	
University of Puerto Rico	

*Schools with speech and hearing in a department separate from special education.

†Many of these schools have never applied for Public Law 85-926 funds.

APPENDIX C

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